

# Standard Bidding Document

Tender No. P-13/2026 To Build and Operate a Central Control Unit (CCU)  
for Digital Interventions  
(Goods)

National

Two Stage



*May 05, 2026*

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## INVITATION TO BIDS PROCUREMENT OF GOODS

1. The **Pakistan Revenue Automation Pvt Limited (Pakistan Revenue Automation Pvt Limited)** has reserved Funds for the procurement planned for FY **2025-26**. The **Pakistan Revenue Automation Pvt Limited (Pakistan Revenue Automation Pvt Limited)** intends to apply part of the proceeds of this Fund to cover eligible payments under the contract for the "**Tender No. P-13/2026 To Build and Operate a Central Control Unit (CCU) for Digital Interventions**".
2. The **Pakistan Revenue Automation Pvt Limited (Pakistan Revenue Automation Pvt Limited)** invites E-bids from eligible Bidders for procurement of goods described in the bidding documents on **EPADS v2.0**.
3. **Two Stages** will be used by adopting **Quality and Cost Based Selection (QCBS)** Technique for the subject procurement, in line with the Public Procurement Rules, 2004 and any Regulations, Regulatory Guides, Procurement Guidelines or Instructions issued by the Authority from time to time.
4. All Bids must be accompanied by a Bid Security amounting described in Bid Security Section in Bidding Document in the form of **Pay Order, Demand Draft**. Where **Bid Security** is not required by the **Procuring Agency**, Bidders are required to furnish **Bid Security Declaration** as specified in Bidding Document.
5. E-Bidding documents, containing detailed terms & conditions, specifications and requirements etc. are available on **e-Pak Acquisition and Disposal System (EPADS)** at <https://vendors.epads.gov.pk/>.
6. Bidder(s) are required to get themselves registered on **EPADS v2.0** on or before **Thursday, May 21, 2026 11:00 AM**. E-bids will be opened using **EPADS v2.0** on the same day at **Thursday, May 21, 2026 11:30 AM**. Manual submission of Bids shall not be entertained. Those vendors who have not yet registered on the new version of **EPADS v2.0**, may register themselves on <https://vendors.epads.gov.pk/>. A tutorial to explain the registration process is available at <https://www.youtube.com/watch?v=MNW6T38v7tc>

7. In terms of Rules 48 of Public Procurement Rules, 2004 Grievance Redressal Committee (GRC) is notified for the subject procurement and notification copy is available on the procuring agency's website and on Authority's website at ([www.ppra.org.pk](http://www.ppra.org.pk)).

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## Instructions to Bidders

## A. Introduction

### 1. Scope of Bids

1.1 The Procuring Agency (PA), as indicated in the **Bids Data Sheet (BDS)** invites Bids **through EPADS v2.0** for the provision of Goods for as specified in the BDS and **in Section V - Evaluation Criteria, Specifications & Schedule of Requirements**. The name, identification, and number of items/deliverables are provided in the **BDS**. The successful Bidders will be expected to provide the goods within the specified period and timeline(s) as stated in the **BDS**.

### 2. Source of Funds

2.1 Source of funds is referred in Clause-1 of Invitation for Bids.

### 3. Eligible Bidders

3.1 A Bidder may be natural person, company or firm or public or semi-public agency of Pakistan or any foreign country, or any combination of them with a formal existing agreement (on Judicial Papers) in the form of a joint venture, consortium, or association. In the case of a joint venture, consortium, or association, all members shall be jointly and severally liable for the execution of the Contract in accordance with the terms and conditions of the Contract. The joint venture, consortium, or association shall nominate a Lead Member as nominated in the BDS, who shall have the authority to conduct all business for and on behalf of any and all the members of the joint venture, consortium, or association during the Bidding process, and in case of award of contract, during the execution of the contract.

3.2 Verifiable copy of the agreement that forms a joint venture, consortium or association shall be required to be submitted as part of the Bid.

3.3 The appointment of Lead Member in the joint venture, consortium, or association shall be confirmed by submission of a valid Power of Attorney to the Procuring Agency.

3.4 Any bid submitted by the joint venture, consortium or association shall indicate the part of proposed contract to be performed by each party and each party shall be evaluated (or post qualified if required) with respect to its contribution only, and the responsibilities of each party shall not be substantially altered without prior written approval of the Procuring Agency and in line with

any instructions issued by the Authority.

*(The limit on the number of members of JV or Consortium or Association may be prescribed in BDS, in accordance with the guidelines issued by the PPRA).*

3.5 The invitation for Bids is open to all prospective suppliers, manufacturers, or authorized agents / dealers subject to any provisions of incorporation or licensing by the respective national incorporating agency or statutory body established for that particular trade or business. Procuring agencies shall specify the registration/licensing requirements for the foreign bidders keeping in view the requirement of that business.

3.6 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest with one or more parties in this Bidding process, if they:

1. are associated or have been associated in the past, directly or indirectly with a firm or any of its affiliates which have been engaged by the Procuring Agency to provide consulting services for the preparation of the design, specifications and other documents to be used for the procurement of the Goods to be purchased under this Invitation for Bids.
2. have controlling shareholders in common; or
3. receive or have received any direct or indirect subsidy from any of them; or
4. have the same legal representative for purposes of this Bid; or
5. have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bids of another Bidder, or influence the decisions of the Procuring Agency regarding this Bidding process; or
6. Submit more than one Bid in this Bidding process.

3.7 A Bidder may be ineligible if –

1. he is declared bankrupt or, in the case of company or firm, insolvent;
2. payments in favor of the Bidder is suspended in accordance with the judgment of a court of law other than a judgment declaring bankruptcy and resulting (in accordance with the national laws) in the total or partial loss of the right to administer and dispose of its property;

3. the Bidder is convicted, by a final judgment, of any offence involving professional conduct;

4. the Bidder is blacklisted locally or by international organizations and hence debarred due to involvement in corrupt and fraudulent practices, or performance failure or due to breach of Bid securing declaration.

3.8 As and when required, bidders shall provide to the Procuring Agency evidence of their eligibility, proof of compliance with the necessary legal requirements to carry out the contract effectively.

3.9 Bidders shall submit Bids relating to the nature, conditions and modalities of sub-contracting wherever the sub-contracting of any elements of the contract amounting to more than ten (10) percent of the Bid price is envisaged.

## 4. Eligible Goods and Related Services

4.1 All goods and related services to be supplied under the contract shall have their origin in eligible source countries, and all expenditures made under the contract will be limited to such goods and services. For purpose of this Bid, ineligible countries are the countries declared ineligible by the Federal Government.

## 5. One Bid per Bidder

5.1 A bidder shall submit only one Bid, in the same bidding process, either individually as a Bidder or as a member in a joint venture or any similar arrangement.

5.2 The Bidder shall not engage a subcontractor for any portion of the contract if the value of such subcontracting exceeds thirty percent (30%) of the total contract amount.

## 6. Cost of Bidding

6.1 Any cost incurred by the bidder relating to the preparation and submission of its Bid shall be borne by the bidder, and the Procuring Agency shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

## B. Bidding Documents

## 7. Contents of Bidding Document

7.1 The Goods required, Bidding procedures, and terms and conditions of the contract are prescribed in the Bidding Documents. In addition to the Invitation for Bids, the Bidding documents which should be read in conjunction with any addenda issued in accordance with **ITB 9.1** include:

**Section I** -Invitation to Bids

**Section II** Instructions to Bidders (ITB)

**Section III** Bid Data Sheet (BDS)

**Section IV** Evaluation Criteria, Specifications, Schedule of Requirements

**Section V** Bid Forms

**Section VI** General Conditions of Contract (GCC)

**Section VII** Special Conditions of Contract (SCC)

**Section VIII** Contract Forms

7.2 The Bidder is expected to examine all instructions, forms, terms and specifications in the Bidding documents. Failure to furnish all the information required in the Bidding documents through **EPADS v2.0** will be at the Bidder's risk and may result in the rejection of his Bids.

## 8. Clarification of Bidding documents

8.1 A prospective Bidder requiring any clarification of the Bidding documents may notify the Procuring Agency through **EPADS v2.0**.

8.2 The Procuring Agency will within three (3) working days after receiving the request for clarification, respond to any request for clarification through **EPADS v2.0** provided that such request is received not later than three (03) days prior to the deadline for the submission of Bids as prescribed in **ITB 22**

8.3 Copies of the Procuring Agency's response will be forwarded to all identified Prospective Bidders through **EPADS v2.0**, including a description of the inquiry, but without identifying its source.

8.4 Should the Procuring Agency deem it necessary to amend the Bidding document as a result of a clarification, it shall do so following the procedure under **ITB 9**.

8.5 If indicated **in the BDS**, the Bidder's designated representative is invited at the Bidder's cost to attend a pre-Bid meeting at the place, date and time mentioned **in the BDS**. During this pre-Bid meeting, prospective Bidders may request clarification of the schedule of requirement, the Evaluation Criteria or any other aspects of the Bidding document.

8.6 Minutes of the pre-Bid meeting, if applicable, including the text of the questions asked by Bidders, including those during the meeting (without identifying the source) and the responses given, together with any responses prepared after the meeting will be uploaded on **EPADS v2.0**. Any modification to the Bidding documents that may become necessary as a result of the pre-Bid meeting shall be made by the Procuring Agency exclusively through the use of an Addendum pursuant to **ITB 9**. Non-attendance at the pre-Bid meeting will not be a cause for disqualification of a Bidder.

## 9. Amendment of Bidding documents

9.1 Before the deadline for submission of Bids, the Procuring Agency for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder or Pre-Bid meeting may modify the Bidding documents by issuing addenda through **EPADS v2.0**.

9.2 The Procuring Agency shall promptly publish the addendum through **EPADS v2.0**.

9.3 Any addendum issued including the notice of any extension of the deadline shall also be communicated through EPADS v2.0 to all the bidders who have already submitted their bids. Such bidders shall have the right to withdraw their already submitted bid and re-submit the revised bid prior to the original or extended bid submission deadline.

9.4 To give prospective Bidders reasonable time in which to take an addendum/corrigendum into account in preparing their Bids, the Procuring Agency may, at its discretion, extend the deadline for the submission of Bids through **EPADS v2.0**:

Provided that the Procuring Agency shall extend the deadline for submission of Bids, if such an addendum is issued within last three (03) days of the Bids submission deadline.

## C. Preparation of Bids

## 10. Language of Bid

10.1 The Bid prepared by the bidder, as well as all correspondence and documents relating to the Bids exchanged by the Bidder and the Procuring Agency shall be written in the English language unless otherwise specified in the BDS. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate translation of the relevant pages in the English language unless otherwise specified in the **BDS**, in which case, for purposes of interpretation of the Bidder, the translation shall govern.

## 11. Documents and samples Constituting the Bid

**11.1 The Bid prepared by the Bidder shall constitute** the documents required in the **BDS**.

Details of sample(s) where applicable and requested in the BDS.

1. Documentary evidence established in accordance with ITB that the Bidder is eligible and/or qualified for the subject bidding process;
2. Documentary evidence establish that the Bidder has been authorized by the manufacturer to deliver the goods into Pakistan, where required and where the supplier is not the manufacturer of those goods;
3. Documentary evidence establish that the goods and related services to be supplied by the Bidder are eligible goods and services, and conform to the Bidding Documents;
4. Bid security or Bid Securing Declaration furnished in accordance with **ITB 18**.

## 12. Documents Establishing Eligibility of the Goods and Conformity to Bidding documents

**12.1** To establish the conformity of the bidder to the Bidding document, the Bidder shall furnish as part of its Bids the documentary evidence that Goods provided conform to the technical specifications and standards.

## 13. Documents Establishing Eligibility and Qualification of the Bidder

**13.1** The Bidder shall furnish, as part of its Bid, all those documents establishing the Bidder's eligibility to participate in the Bidding process and/or its qualification to perform the contract if its Bid is accepted.

## 14. Form of Bids

**14.1** The Bidder shall fill the Form of Bid furnished in the Bidding documents. The Bids Form must be completed without any alterations to its format and no substitute shall be accepted.

## 15. Bids Prices

15.1 The Bids Prices quoted by the Bidder in the Form of Bid and in the Price Schedules shall conform to the requirements specified below or exclusively mentioned hereafter in the Bidding documents.

15.2 All items in the Schedule of Requirement must be listed and priced separately in the Price Schedule(s). If a Price Schedule shows items listed but not priced and neither explicitly denied, their prices shall be construed to be included in the prices of other items.

15.3 Items not listed in the Price Schedule shall be assumed not to be included in the Bid, and provided that the Bid is still substantially responsive in their absence or due to their nominal nature, the corresponding average price of the respective item(s) of the remaining substantially responsive Bidder(s) shall be construed to be the price of those missing item(s)

15.4 The Bid price to be quoted in the Form of Bid in accordance with **ITB 14.1** shall be the total price of the Bid.

15.5 The Bidder shall indicate on the appropriate Price Schedule, the unit prices (where applicable) and total Bid price of the Goods it proposes to provide under the contract.

15.6 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account. A Bid submitted with an adjustable price will be treated as non-responsive and shall be rejected.

## 16. Bids Currencies

16.1 Prices shall be quoted in Pakistani Rupees unless otherwise specified in the BDS in accordance with Rule 30(2) of the Public Procurement Rules, 2004.

## 17. Bids Validity Period

17.1 Bids shall remain valid for the period specified in the **BDS** after the Bid submission deadline prescribed by the Procuring Agency. A Bid valid for a shorter period shall be rejected by the Procuring Agency as non-responsive. The period of Bid validity will be determined from the complementary Bid securing instrument, i.e. the expiry period of Bid Security or Bids Securing Declaration as the case may be.

17.2 The procuring agency shall ordinarily be under an obligation to process and evaluate the bid and to issue letter of award within the stipulated bid validity period.

17.3 Under exceptional circumstances, prior to the expiration of the initial Bid validity period, the Procuring Agency may request the Bidders' consent to an extension of the period of validity of their Bids only once through **EPADS v2.0**, for the period not more than the period of initial bid validity. The Bid Security provided under **ITB 18** shall also be suitably extended. A Bidder may refuse the request without forfeiting its Bid security or causing to be executed its Bid Securing Declaration. A Bidder agreeing to the request will not be required nor permitted to modify its Bid, but will be required to extend the validity of its Bid Security or Bid Securing Declaration for the period of the extension.

## 18. Bid Security or Bid Securing Declaration

18.1 The Bidder shall furnish as part of its Bid, a Bid Security in accordance with Rule 25 of the Public Procurement Rules, 2004.

18.2 The original Bid Security shall be enclosed within the sealed envelope and to be submitted physically before closing time for submission of bids. Whereas, scanned copy of bid security shall be uploaded electronically through EPADS v2.0 before closing hours for submission of bids.

18.3 The Bidder who failed to submit the original Bids security before the submission deadline shall be disqualified straightaway.

18.4 The Bid Security or Bid Securing Declaration is required to protect the Procuring Agency against the risk of Bidder's conduct which would warrant the security's forfeiture, pursuant to **ITB 18.7**.

18.5 The Bid Security shall be denominated in the local currency, and it shall be a Bank Draft in the name of the Procuring Agency and valid for twenty-eight (28) days beyond the end of the validity of the Bid. This shall also apply if the period

for Bids/Bid Validity is extended. In either case, the form must include the complete name of the Bidder.

18.6 The Bid Security shall be payable promptly upon written demand by the Procuring Agency in case any of the conditions listed in **ITB 18** are invoked.

18.7 Unsuccessful Bidders' Bid Security will be discharged or returned as promptly as possible, however in no case later than thirty (30) days after the expiration of the period of Bids Validity prescribed by the Procuring Agency pursuant to **ITB 17**. The Procuring Agency shall make no claim to the amount of the Bid Security, and shall promptly return the Bid Security document, after whichever of the following that occurs earliest:

1. the expiry of the Bid Security;
2. the entry into force of a procurement contract and the provision of a Performance Guarantee, for the performance of the contract if such a guarantee, is required by the Bid documents;
3. the rejection by the Procuring Agency of all Bids;
4. the withdrawal of the Bids prior to the deadline for the submission of Bids, unless the Bids documents stipulate that no such withdrawal is permitted.

18.8 The successful Bidder's Bids Security will be discharged upon the Bidder signing the contract, or furnishing the Performance Guarantee.

18.9 The Bid Security may be forfeited or the Bid Securing Declaration executed:

1. if a Bidder:
  2. withdraws its Bid during the period of Bid Validity as specified by the Procuring Agency, and referred by the Bidder on the Form of Bids except as provided for in **ITB 17.2**; or
  3. does not accept the correction of errors; or
  4. in the case of a successful Bidder, if the Bidder fails:
    5. to sign the contract; or
    6. to furnish Performance Guarantee.

## 19. Withdrawal, Substitution, and Modification of Bid

19.1 Before Bid submission deadline, any Bidder may withdraw, substitute, or modify its Bid after it has been submitted through EPADS v2.0. Bids requested to be withdrawn, shall be returned unopened to the Bidders through **EPADS v2.0**.

## 20. Format and Signing of Bid

20.1 The Bidder shall prepare and submit Bids with due diligence after carefully reading all the terms and condition **before bid submission deadline** through EPADS v2.0.

## D. Submission of Bids

### 21. Submission of Bids through EPADS v2.0

21.1 The Technical and Financial Bids if required to submitted, shall be submitted on **EPADS v2.0**.

### 22. Deadline for Submission of Bids

22.1 Bids shall be received by the Procuring Agency through **EPADS v2.0** before bid submission deadline.

22.2 The Procuring Agency may, under exceptional circumstances, extend the deadline for the submission of Bids, after recording reasons in writing and in an equal opportunity manner.

In such case, all rights and obligations of the Procuring Agency and the Bidders that were previously governed by the original deadline shall thereafter be subject to the revised deadline.

## E. Opening and Evaluation of Bids

### 23. Opening of Bids

23.1 The Bid Evaluation Committee of the Procuring Agency shall open all Bids through the EPADS v2.0, on the date and time specified in the Bid Data Sheet (BDS).

23.2 The Bid Evaluation Committee **shall generate minutes through EPADS v2.0 containing brief details of bid opening process.** The record of the Bid opening shall include, as a minimum: the name of the Bidder, the Bid price if applicable, and the presence or absence of a Bid Security or Bid Securing Declaration.

23.3 The procuring agency shall live broadcast the opening of bids on national media or on their website or digital channels, if the volume of procurement exceeds five hundred million rupees in case of goods and services and one thousand million rupees in case of works.

23.4 In case the date of opening of bid has been declared as public holiday or the procuring agency fail to open bid due to any EPADS v2.0 related issues, the submission and opening of bids shall be shifted to the next working day on the same time.

23.5 In case of Single Stage One Envelope Procedure, the Bidders names, the Bid prices, the total amount of each Bid and, the presence or absence of Bid Security, Bid Securing Declaration and such other details as the Procuring Agency may consider appropriate, will be announced by the Bid Evaluation Committee.

## 24. Clarification of Bids

24.1 To assist in the examination, evaluation and comparison of Bids of the Bidders, the Procuring Agency may, ask any Bidder for a clarification of its Bid including breakdown of prices.

24.2 The request for clarification and the response shall be sought through EPADS v2.0 **before three days prior to the deadline for submission of bids.** No change in the prices or substance of the Bids shall be sought, offered, or permitted.

24.3 The alteration or modification in the BIDS which in any way affect the following parameters will be considered as a change in the substance of a Bids:

1. evaluation & qualification criteria;
2. required scope of work or specifications;
3. all securities requirements;
4. tax requirements;

5. terms and conditions of Bidding documents.

6. change in the ranking of the Bidder

24.4 From the time of Bids opening to the time of Contract award if any Bidder wishes to contact the Procuring Agency on any matter related to the Bids it should do so through **EPADS v2.0**.

## 25. Preliminary Examination of Bids

25.1 Prior to the detailed evaluation of Bids, the Procuring Agency will determine whether each Bid:

1. meets the eligibility criteria defined in **ITB 3**;
2. has been prepared as per the format and contents defined by the Procuring Agency in the Bidding documents;
3. is accompanied by the required securities; and
4. is substantially responsive to the requirements of the Bidding documents.

25.2 The Procuring Agency's determination of a Bid's responsiveness will be based on the contents of the Bid itself.

25.3A substantially responsive Bid is one which conforms to all the terms, conditions, and specifications of the Bidding documents, without material deviation or reservation. A material deviation or reservation is one that: -

1. affects in any substantial way the scope, quality, or performance of the Goods;
2. limits in any substantial way, inconsistent with the Bidding documents, the Procuring Agency's rights or the Bidders obligations under the Contract; or
3. if rectified, would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

25.3 If a Bids is not substantially responsive, it will be rejected by the Procuring Agency and may not subsequently be evaluated for complete technical responsiveness.

## 26. Examination of Terms and Conditions; Technical Evaluation

26.1 The Procuring Agency shall examine the Bids to confirm that all terms and conditions specified in the **GCC** and the **SCC** have been accepted by the Bidder without any material deviation or reservation.

26.2 The Procuring Agency shall evaluate the technical aspects of the Bids submitted, to confirm that all requirements specified in Schedule of Requirements and Technical Specifications of the Bidding documents have been met without material deviation or reservation.

26.3 If after the examination of the terms and conditions and the technical evaluation, the Procuring Agency determines that the Bid is not substantially responsive in accordance with **ITB 25.2**, it shall reject the Bid.

## 27. Correction of Errors

27.1 Bids determined to be substantially responsive will be checked for any arithmetic errors. Errors will be corrected as follows: -

1. if there is a discrepancy between unit prices and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected, unless in the opinion of the Procuring Agency there is an obvious misplacement of the decimal point in the unit price, in which the total price as quoted shall govern and the unit price shall be corrected;
2. if there is an error in a total corresponding to the addition or subtraction of sub-totals, the sub-totals shall prevail and the total shall be corrected; and
3. where there is a discrepancy between the amounts in figures and in words, the amount in words will govern.
4. Where there is discrepancy between grand total of price schedule and amount mentioned on the Form of Bids, the amount referred in Price Schedule shall be treated as correct subject to elimination of other errors.

27.2 The amount stated in the Bid will, be adjusted by the Procuring Agency in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount, its Bid will then be rejected, and the Bid Security may be forfeited or the Bids Securing Declaration may be executed.

## 28. Conversion to Single Currency

28.1 To facilitate evaluation and comparison, the Procuring Agency will convert all Bids prices expressed in the amounts in various currencies in which the Bids prices are payable. For the purposes of comparison of bids quoted in different currencies, the price shall be converted into a single currency specified in the bidding documents. The rate of exchange shall be the selling rate prevailing on the date of opening of financial bids specified in the bidding documents, in accordance with weighted average customer exchange rates list issued by the State Bank of Pakistan on that day.

## 29. Evaluation of Bids

29.1 The Bids, quotations, or proposals shall be evaluated by the respective evaluation committees as per evaluation criteria described in the Bidding Documents in accordance with Rule 29 and 30 of the Public Procurement Rules, 2004.

### **1. Least Cost Based Selection (LCBS)**

After meeting the requirements of eligibility, qualification and substantial responsiveness, the bid in compliance with all the mandatory (technical) specifications/requirements and/or requisite quality threshold (if any), and having lowest evaluated cost (or financial proposal) shall be considered Successful Bid.

### **2. Quality and Cost Based Selection (QCBS)**

In such combination, there shall be some specific weightage of both the technical features and financial aspects of the proposal. The financial marks shall be awarded on the basis of inverse proportion calculations. The successful bid shall be declared, on the basis of combined evaluation.

### **3. Quality Based Selection (QBS)**

After meeting the requirements of eligibility, qualification and substantial responsiveness the bid in compliance with all the mandatory (technical) specifications/requirements and attaining highest marks in the Technical Evaluation considering all other qualitative and/or quantitative parameters (or point rated criteria) for technical proposal(s) such as working methodology, implementation plan, resource allocation, additional functionalities, risk management approach, knowledge transfer techniques, post implementation methodology etc. shall be treated as highest ranked bid. Later on, the financial proposal of highest ranked bidder shall be opened, however, in case of failure to proceed further with such a bidder, the procuring agency may resort to second

highest bidder and so on.

29.2 In case of tie of bids, the bidders shall be provided an opportunity to offer their best and final monetary offer through EPADS v2.0. However, in no case the rates shall be higher than the original financial bids.

## 30. Domestic Preference

30.1 The procuring agency shall evaluate and compare bids, allow for preference to domestic bidders, while competing with the international bidders in accordance with the policies of Federal Government.

The percentage of preference, to be accorded shall be clearly mentioned in the bidding documents under the bid evaluation criteria.

## 31. Determination of Successful Bid

31.1 Selection technique will be adopted for determining the Successful Bid in accordance with the criteria referred in the BDS or prescribed in the separate section titled as Evaluation Criteria.

31.2 In case where the Procuring Agency adopts the Cost Based Evaluation Technique and, the Bid with the lowest evaluated price from amongst those which are eligible, compliant and substantially responsive shall be the Successful Bid.

31.3 The Procuring Agency may adopt the Quality & Cost Based Selection Technique due to the following two reasons:

1. Where the Procuring Agency knows about the main features, usage and output of the products; however not clear about the complete features, technical specifications and functionalities of the goods to be procured and requires the bidders to submit their proposals defining those features, specifications and functionalities; or

2. Where the Procuring Agency, in addition to the mandatory requirements and mandatory technical specifications, requires parameters specified in EvaluationCriteria to be evaluated while determining the quality of the goods.

31.4 In such cases, the Procuring Agency may allocate certain weightage to these factors as a part of Evaluation Criteria, and may determine the ranking of the bidders on the basis of combined evaluation in accordance with provisions of Rule 2(1)(h) of the Public Procurement Rules, 2004.

## 32. Abnormally Low Financial Bids

32.1 Where the Bid price is considered to be abnormally low, the Procuring Agency shall perform price analysis either during determination of Successful Bids or as a part of the post-qualification process.

32.2 The Procuring Agency may reject an Abnormally low financial bids.

32.3 In order to identify the Abnormally Low Bids (ALB) following approaches can be considered to minimize the scope of subjectivity:

1. Comparing the Bids price with the cost estimate;
2. Comparing the Bids price with the Bids offered by other Bidders submitting substantially responsive Bids; and
3. Comparing the Bids price with prices paid in similar contracts in the recent past either government- or development partner-funded.

32.4 The Procuring Agency will determine to its satisfaction whether the Bidder that is selected as having submitted the successful bid is qualified to perform the contract satisfactorily.

32.5 The determination will take into account the Bidder's financial, technical, and production capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, as well as such other information as the Procuring Agency deems necessary and appropriate. Factors not included in these Bidding documents shall not be used in the evaluation of the Bidders' qualifications.

32.6 Procuring Agency may seek "Certificate for Independent Price Determination" from the Bidder and the results of reference checks may be used in determining an award of contract.

Explanation: The Certificate shall be furnished by the Bidder. The Bidder shall certify that the price is determined keeping in view of all the essential aspects such as raw material, its processing, value addition, optimization of resources due to economy of scale, transportation, insurance and margin of profit etc.

32.7 An affirmative determination will be a prerequisite for award of the contract to the Bidder. A negative determination will result in rejection of the Bidder's Bids, in which event the Procuring Agency will proceed to the next ranked Bidder to make a similar determination of that Bidder's capabilities to perform

satisfactorily.

## F. Award of Contract

### 33. Criteria of Award

33.1 The Procuring Agency will award the Contract to the Bidder whose Bids has been determined to be substantially responsive to the Bidding documents and who has been declared as Most Advantageous Bidder.

### 34. Negotiations

34.1 The procuring agency shall not engage in negotiations with respect to scope and price with the bidder except when the procuring agency conducts a procurement using direct **or negotiated** contracting or a request for proposals with evaluation based on quality alone.

34.2 The procuring agency may negotiate with the most advantageous bid with a view to streamline the work or task execution, at the time of contract finalization on methodology, work plan, staffing, finalizing payment arrangements, delivery arrangements, minor amendments to the special conditions of the contract.

### 35. Procuring Agency Right to reject all bids

35.1 The Procuring Agency reserves the right to reject all bids or proposals at any time prior to the issuance of the Letter of Award, without incurring any liability, in accordance with Rule 33 of the Public Procurement Rules, 2004.

### 36. Procuring Agency's Right to Vary Quantities at the Time of Award

36.1 The Procuring Agency reserves the right at the time of contract award to increase or decrease the **quantity of** Goods originally specified in these Bidding documents provided this does not exceed **by** 15%, without any change in unit price or other terms and conditions of the Bids and Bidding documents.

### 37. Notification of Award

37.1 Prior to the award of contract, the procuring agency shall announce and publish the result of bid evaluation on **EPADS v2.0** in accordance with Rule 35

of the Public Procurement Rules, 2004.

37.2 The Bidder whose Bids has been accepted will be notified of the award by the Procuring Agency prior to expiration of the Bids/Bid Validity period. The Letter of Award will state the sum that the Procuring Agency will pay the successful Bidder in consideration for the delivery of Goods as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price).

37.3 The Letter of award will constitute the formation of the Contract, subject to the Bidder furnishing the Performance Guarantee and signing of the contract.

## 38. Signing of Contract

38.1 Promptly after issuance of Letter of award, Procuring Agency shall send the successful Bidder the draft Contract, incorporating all terms and conditions as agreed by the parties to the contract.

38.2 Immediately after the Redressal of grievance by the GRC (if any), mandatory standstill period in accordance with Rule 35 of the Public Procurement Rules, 2004 and **after fulfillment of all condition's precedent** of the Contract Form, the successful Bidder and the Procuring Agency shall sign the Contract.

## 39. Corrupt & Fraudulent Practices

39.1 Procuring Agencies (including beneficiaries of Government funded projects and procurement) as well as Bidders/Contractors under Government financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts, and will avoid to engage in any corrupt and fraudulent practices.

## F. Grievance Redressal & Complaint Review Mechanism

### 40. Constitution of Grievance Redressal

40.1 The Grievance Redressal Committee shall address the grievance, if any submitted by any party, including the bidder, in accordance with Rule 48 of the Public Procurement Rules, 2004 to be read with Redressal of Grievances Regulations, 2021.

40.2 In case if any party or the bidder is not satisfied with the decision of the GRC or if it fails to decide within ten days, the bidder or the party may file an appeal before the Appellate Committee of the Authority in accordance with Rule 48 of the Public Procurement Rules, 2004 to be read with Redressal of Grievances Regulations, 2021.

## G. Mechanism of Blacklisting

### 41. Mechanism of Blacklisting

41.1 The Procuring Agency shall initiate blacklisting proceedings against any bidder, supplier, or contractor in accordance with the Mechanism for Blacklisting Regulations, 2024, read with Rule 19 of the Public Procurement Rules, 2004.

41.2 The blacklisted/debarred bidder may file the review petition before the Authority in accordance with Rule 19 of the Public Procurement Rules, 2004 to be read with Procedure of filing and disposal of Review Petitions Regulations, 2021.





## Bid Data Sheet

# Bids Data Sheet (BDS)

The following specific data for the procurement of Goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

*BDS Clause Number*

*ITB Number*

*Amendments of, and Supplements to, Clauses in the Instruction to Bidders*

## A. Introduction

**BDS Clause Number 1**

**ITB Number 1.1**

Name of Procuring Agency: **Pakistan Revenue Automation Pvt Limited (Pakistan Revenue Automation Pvt Limited)**

The subject of procurement is: **Tender No. P-13/2026 To Build and Operate a Central Control Unit (CCU) for Digital Interventions**

Expected commencement date:

**BDS Clause Number 2**

**ITB Number 2.1**

Financial year for the operations of the Procuring Agency: **2025-26**

Name and identification number of the Contract: **P30122**

**BDS Clause Number 3**

**ITB Clause Number 3.1**

JV/Consortium or Association Allowed: **No**

Number of JV/Consortium Members: **Nil**

*see section of eligibility criteria.*

## B. Bidding Documents

**BDS Clause Number 4**

**ITB Number 8.1**

The Bidders may seek clarifications through **EPADS v2.0** : Clarification Date:  
Monday, May 18, 2026  
Pre-Bid Meeting: Thursday, May 14, 2026 11:00 AM  
Venue: PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3.

## C. Preparation of Bids

### **BDS Clause Number 5**

#### **ITB Number 10.1**

The Language of all correspondences and documents related to the Bids shall be in: **English**

List of documents required along with the bid:

1. As per Scope of Work

### **BDS Clause Number 6**

#### **ITB Number 11.1**

#### **Items/Lots and threere relateddocuments:**

*See section items and Lots*

### **BDS Clause Number 7**

#### **ITB Number 12.1**

#### **Items / Lots Specifications:**

*see section of items specifications.*

### **BDS Clause Number 8**

#### **ITB Number 15.6**

The price shall be **Fixed**.

### **BDS Clause Number 9**

#### **ITB Number 16.1**

Currency of the Bids shall be : **PKR**

### **BDS Clause Number 10**

#### **ITB Number 17.1**

The Bids/Bid Validity period shall be: **180 Days**

**BDS Clause Number 11**

**ITB Number 18.1**

The amount of Bid Security shall be as defined in Bid Security Section for items and lots given in **BDS 6**

The Bid Security shall be in the form of: **Pay Order, Demand Draft**

## D. Submission of Bids

**BDS Clause Number 12**

**ITB Number 20.1**

Bid shall be submitted online on EPADS v2.0 whereas hard copy of the bid security should be submitted to the following;

**PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory** before bid submission deadline.

Bids that are not submitted on EPADS v2.0 shall be disqualified.

The deadline for Bids submission is: **Thursday, May 21, 2026 11:00 AM**

## E. Opening and Evaluation of Bids

**BDS Clause Number 13**

**ITB Number 23.1**

The Bids opening shall take place on **EPADS v2.0**.

Day : **Thursday**

Date: **Thursday, May 21, 2026**

Time : **11:30 AM**

**BDS Clause Number 14**

**ITB Number 31.1**

Selection technique adopted will be: **Quality and Cost Based Selection (QCBS)**

*see Evaluation Criteria*

## F. Review of Procurement Decisions

**BDS Clause Number 15**

**ITB Number 41.1**

Grievence against this procurement shall be submitted online on EPADS v2.0.

Arbitrator shall be appointed by mutual consent of the both parties.



## Eligibility Criteria

Bidder's Type	Required Registration
Sole Proprietorship	NADRA CITIZENSHIP (CNIC/NICOP)
Partnership Firm	FBR (NTN)
Company (Private Limited)	FBR (GSTN)
Company (Public Limited)	SECP
Company (Holding Company)	
Company (Limited by Guarantee)	
State Owned Enterprise (Private Limited)	
State Owned Enterprise (Public Limited)	

Eligibility Criteria	Document
1 Evidence of the bidding firm/company's registration/incorporation 2 Provide National Tax Number (NTN) and GST/ PST, (if applicable) in the name of Organization Copy of registration 3 Should be active taxpayer. Status report 4 An affidavit on a minimum PKR 100/- stamp paper, duly declaring that the company was not blacklisted at the time of bid submission by any telecom operator, FMCG company, autonomous body, government, semi-government organization, or any other entity.	Yes

# Evaluation Criteria

Eligible bidder(s) with substantially responsive bid(s) offering **Quality and Cost Based Selection (QCBS)** shall be considered for the award of contract(s).

## Quality and Cost Based Selection (QCBS)

Technical Marks	100
Passing Marks	70
Technical Evaluation Criteria	
Client Portfolio/ Relevant Experience (Qualitative)(Doc Required)	20
Supplied & installed similar nature of Equipment to more than 10 local/international/multinational clients including public sector or private sector organizations: <b>(20)</b>	
Supplied & installed similar nature of Equipment to more than 06 but less than or equal to 10 local/international/multinational clients including public sector or private sector organizations: <b>(15)</b>	
Supplied & installed similar nature of Equipment to more than 03 but less than or equal to 06 local/international/multinational clients including public sector or private sector organizations: <b>(10)</b>	
Compliance to the Technical Specifications and scope of work mentioned in the bidding document (Qualitative)(Doc Required)	40
Presence of Principal/OEM or OEM's authorized Tier 1 partner in Pakistan for equipment warranty & Support Services (Qualitative)(Doc Required)	10

<p>Compliance to the delivery timelines for the supply, installation, commissioning of servers (Qualitative)(Doc Required)</p> <p>The Delivery Timelines for the supply, installation, commissioning of servers is 10-12 weeks after issuance of Purchase Order, Bidder to share compliance. <b>(15)</b></p> <p>12-14 weeks <b>(10)</b></p> <p>14-16 weeks <b>(5)</b></p> <p>above 16 weeks <b>(0)</b></p>	15
<p>Financial Turnover (Qualitative)(Doc Required)</p> <p>Annual turnover /revenue of the company is greater than or equal to 400 million (PKRs) <b>(15)</b></p> <p>Annual turnover /revenue of the company is less than 400 million (PKRs) but greater than or equal to 300 million (PKRs) <b>(10)</b></p> <p>Annual turnover /revenue of the company is less than 300 million (PKRs) but greater than or equal to 200 million (PKRs) <b>(5)</b></p>	15

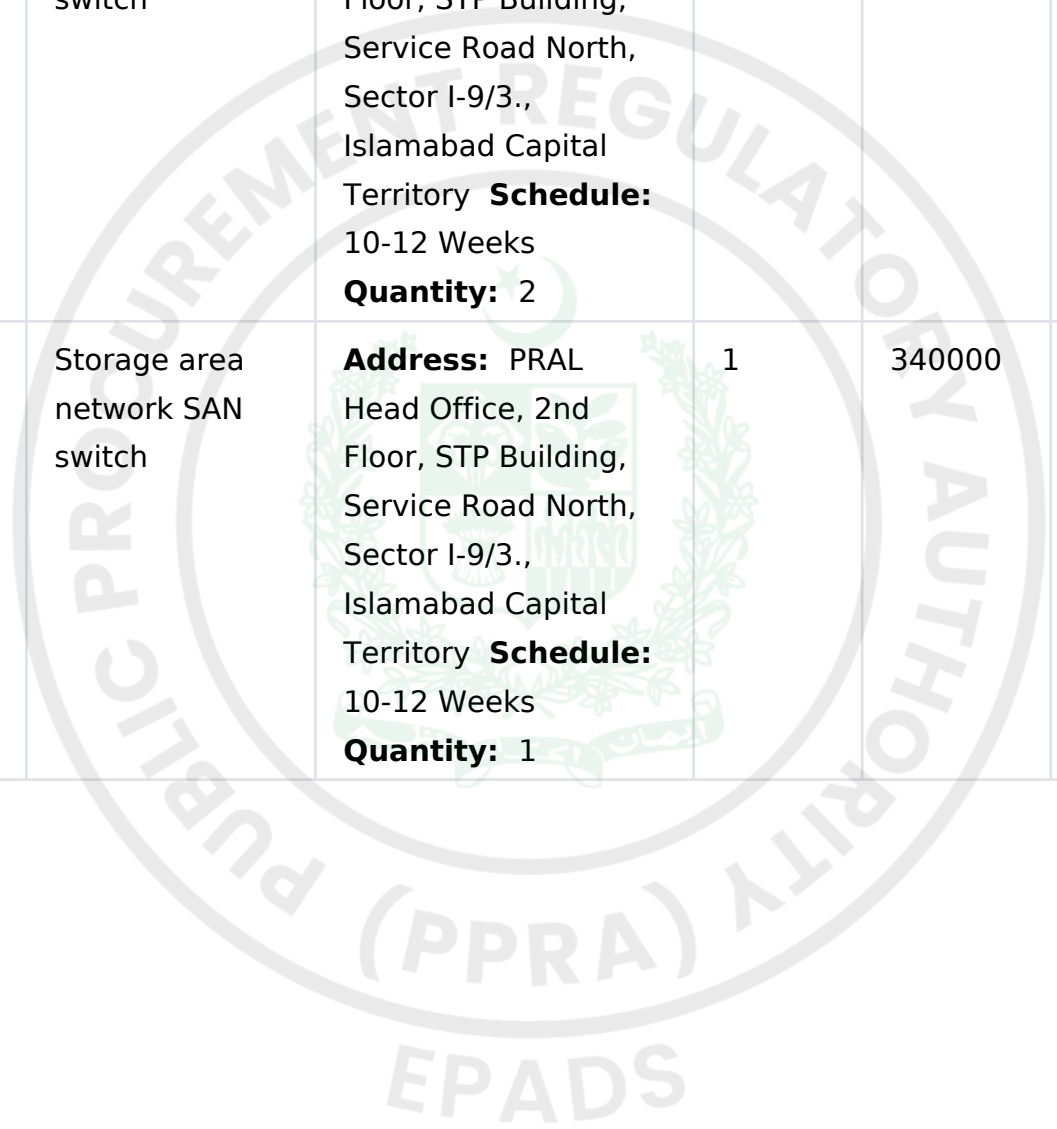
## Items/Lots

### Items Without Lots :

Item	UNSPSC	Delivery Schedule	Quantity	Bid Security	Manufacturer / Dealer Authorization	Warranty
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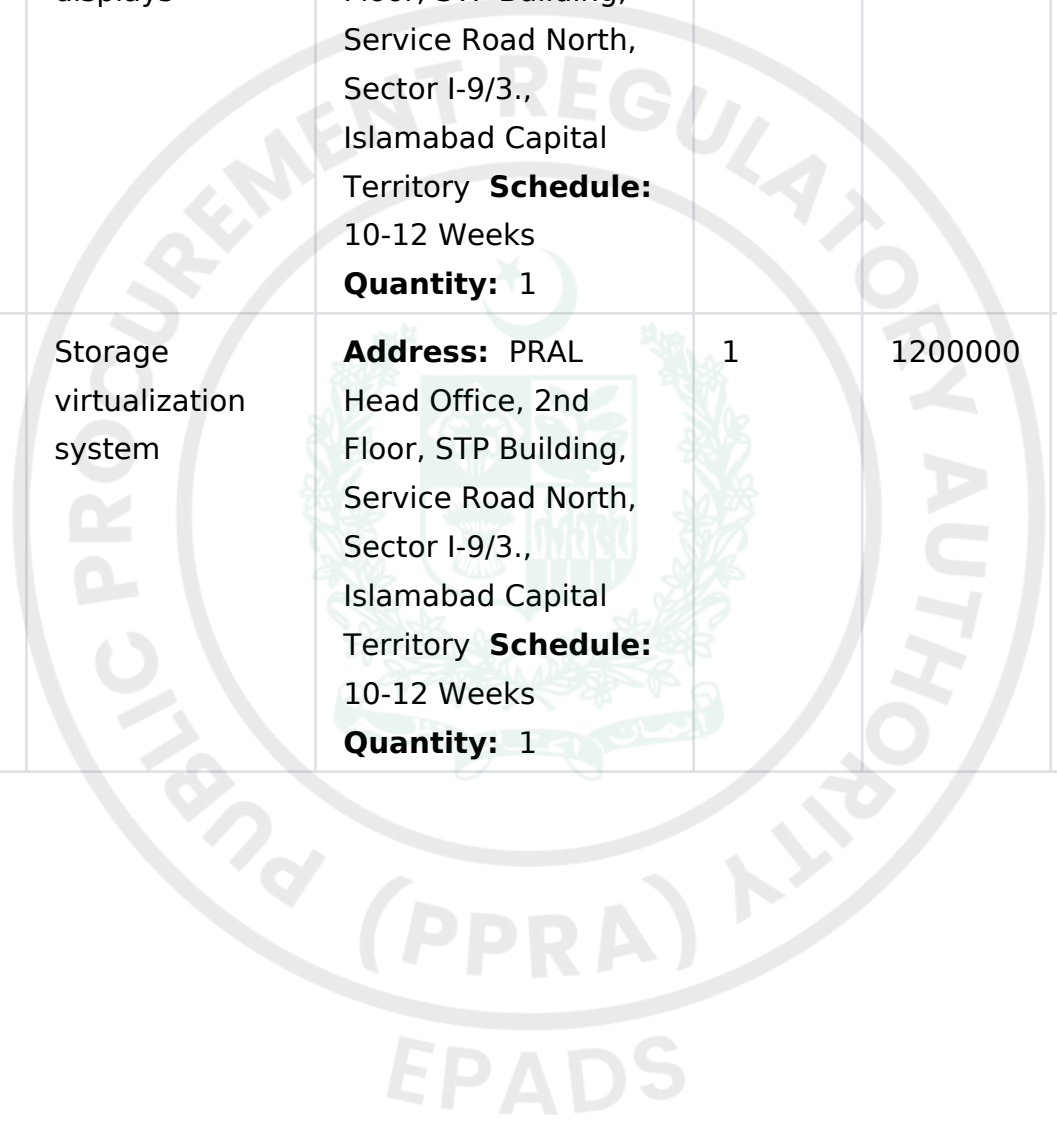
<p>procure, implement, and operationalize a fully on-premise, end-to-end real-time analytical Command and Control Unit (CCU) to support enforcement, compliance monitoring, and operational decision-making</p>	<p>Business intelligence and data analysis software</p>	<p><b>Address:</b> PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory <b>Schedule:</b> 12 weeks <b>Quantity:</b> 1</p>	<p>1</p>	<p>7000000</p>	<p>Manufacturer Authorization form</p>	<p>3 Years</p>
<p>RACK MOUNT SERVERS</p>	<p>Rack systems for rack mount electronic equipment</p>	<p><b>Address:</b> PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory <b>Schedule:</b> 10-12 Weeks <b>Quantity:</b> 5</p>	<p>5</p>	<p>1000000</p>	<p>Manufacturer Authorization form</p>	<p>3 Years</p>

Option-1 SAN(Storage Area Network) Expansion	Storage area network SAN switch	<b>Address:</b> PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory <b>Schedule:</b> 10-12 Weeks <b>Quantity:</b> 2	2	3200000	Manufacturer Authorization form	3 Years
Option-2 New SAN (Storage Area Network)	Storage area network SAN switch	<b>Address:</b> PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory <b>Schedule:</b> 10-12 Weeks <b>Quantity:</b> 1	1	340000	Manufacturer Authorization form	3 Years



LAYER II NETWORK SWITCHES (for CCU Room)	Network switches	<b>Address:</b> PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory <b>Schedule:</b> 10-12 Weeks <b>Quantity:</b> 2	2	60000	Manufacturer Authorization form	3 Years
CCU Video Wall Option-1	Projection screens or displays	<b>Address:</b> PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory <b>Schedule:</b> 10-12 Weeks <b>Quantity:</b> 1	1	200000	Manufacturer Authorization form	3 Years

CCU Video Wall Option-2	Projection screens or displays	<b>Address:</b> PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory <b>Schedule:</b> 10-12 Weeks <b>Quantity:</b> 1	1	290000	Manufacturer Authorization form	3 Years
VDI Solution along with all allied accessories	Storage virtualization system	<b>Address:</b> PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory <b>Schedule:</b> 10-12 Weeks <b>Quantity:</b> 1	1	1200000	Manufacturer Authorization form	3 Years



Veeam Backup & Replication Enterprise Plus or Equivalent	Backup or archival software	<b>Address:</b> PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory <b>Schedule:</b> 10-12 Weeks <b>Quantity:</b> 12	12	100000	Manufacturer Authorization form	3 Years
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### Related Services of Goods:

Yes

Item	UNSPSC	Related Services
procure, implement, and operationalize a fully on-premise, end-to-end real-time analytical Command and Control Unit (CCU) to support enforcement, compliance monitoring, and operational decision-making	Business intelligence and data analysis software	As per Scope of Work
RACK MOUNT SERVERS	Rack systems for rack mount electronic equipment	As per Scope of Work

Item	UNSPSC	Related Services
Option-1 SAN(Storage Area Network) Expansion	Storage area network SAN switch	As per Scope of Work
Option-2 New SAN (Storage Area Network)	Storage area network SAN switch	As per Scope of Work
LAYER II NETWORK SWITCHES (for CCU Room)	Network switches	As per Scope of Work
CCU Video Wall Option-1	Projection screens or displays	As per Scope of Work
CCU Video Wall Option-2	Projection screens or displays	As per Scope of Work
VDI Solution along with all allied accessories	Storage virtualization system	As per Scope of Work
Veeam Backup & Replication Enterprise Plus or Equivalent	Backup or archival software	As per Scope of Work

# Items/Lot Specification

## Items Without Lots :

**Item:** procure, implement, and operationalize a fully on-premise, end-to-end real-time analytical Command and Control Unit (CCU) to support enforcement, compliance monitoring, and operational decision-making

**UNSPSC:** Business intelligence and data analysis software

## Specifications / Requirements:

PRAL issues this RFP to procure, implement, and operationalize a fully on-premise, end-to-end real-time analytical Command and Control Unit (CCU) to support enforcement, compliance monitoring, and operational decision-making. The CCU shall function as a real-time operational nerve centre providing continuous situational awareness, threshold-based alerting, and data-driven visibility across all deployed and future digital interventions. The CCU shall not function as an enterprise data repository or authoritative system of record for any FBR transactional system. This section constitutes the comprehensive technical and commercial specifications for the Software, System Implementation, Operations, and Ongoing Support Services required for the CCU ecosystem. The Vendor is responsible for the complete lifecycle of the solution, ensuring that all support items and operational services are delivered in full alignment with the in-scope requirements

In Scope

- Supply of all software components across the full five-layer CCU architecture: Data Ingestion, Message Broker, Stream Processing Engine, Analytical Store, and Visualization.
- Supply of all enterprise software licenses + licenses for the underlying operating systems with the solutions for production operation across all components for the full contract duration. No component shall be left unlicensed or subject to separate FBR procurement.
- End-to-end implementation across all five layers on FBR-provisioned virtual machines, covering installation, configuration, integration, data modelling, pipeline and stream processing development, dashboard development, and performance tuning.
- Integration with existing and future FBR digital interventions, including production tracking cameras, scanners, digital invoicing systems, POS networks, and Digital Enforcement Stations.
- Development of operational dashboards, KPI panels, drill-down analytical views, and threshold-based alerting aligned to FBR operational requirements.
- Knowledge transfer, training, and technical documentation upon solution acceptance.
- Software support, patch management, and operational co-management for the full three-year contract

duration. h. The Vendor shall also be responsible for fully staffing and operating the Central Control Unit (CCU), including deployment of a dedicated operational team to monitor system uptime, oversee incoming data feeds from digital interventions, manage alerts, and support operational coordination. g. All support services and adherence to Service Level Agreements (SLAs) fall within the vendor's scope of work Out of Scope a. Physical server, storage, and networking hardware. Covered under a separate hardware LOT. b. FBR shall provision the VM Hypervisor per the vendor's formal sizing specification that is mutually agreed upon. But vendor is responsible to provide BOQ for the operating system licenses on which their proposed solutions will run. This is because it is possible that a certain component requires for example Red Hat OS, Windows Server, Ubuntu, Suse Linux etc. c. CCU facility infrastructure including video walls, operator monitors, and workstations. Covered under a separate infrastructure LOT. Note: For detailed scope of Work see attached Annexures

**Item:** RACK MOUNT SERVERS

**UNSPSC:** Rack systems for rack mount electronic equipment

**Specifications / Requirements:**

Rack Mount Servers (Along with all allied accessories and installation) Specifications Rack Mount Servers: • 2 x Intel® Xeon® (Gold 65xxY+ Processor 60M Cache, 2.50 GHz, 32 Cores Intel® latest chipset) or higher. Rack mounted 2U or 3U servers with redundant hot swappable power supplies and fans. Memory: • 1.5 TB memory DDR5 per server or higher. Each server Must have the capacity to be scalable up to 3 TB with Required Expansion Modules/Hardware or more without any additional hardware (apart from DIMM's). Hard Drives: Boot Device: Dedicated boot flash card, minimum 450 GB • Primary Storage: 2 x 960 GB NVMe SSDs or higher • Storage Bays: Hot-swappable hard disk drives supported Note: FBR will retain faulty Hard Drives. Server RAID: • System should have integrated RAID 1, 5, 6 and 10 with on-board RAID controllers or PCIE Card based, with Online Expansion, and Hot Swappable Drives. USB: • Ports Standard USB ports HBA Interface: • 2 HBA NVMe Ready cards with dual ports of 32Gbps or higher data transmission speed. Auto negotiate to 16 & 8 Gbps, along with the required SFP's. Network Interfaces: • Dual OPTICAL 2 x 25 Gbps Ethernet Protocol interface (with SFP fully populated) auto-negotiate to 10Gbps. • 2x1Gbps Ethernet Ports • 1x1Gbps management Operating System Support: • Support for the latest version of all operating systems from Microsoft (x86), Linux, Ubuntu, RHEL, SUSE, VMware/Citrix/Oracle/Microsoft etc. KVM along with allied accessories: • Remote management solution Out of band management with licenses and Hardware Based KVM with keyboard for Console Management. • All accessories which include

installation (Power and cabling) of rack and servers and network connectivity as well. Install Media: • Non-licensed Bootable media/ISO Files for latest version Windows and of ESXI with embedded drivers for server Hardware including, HBA, Network and Raid • Comprehensive post-sales support for hardware, software, and licenses for three (03) years with 24x7 extendable support. • OEM written commitment for support and services, with dedicated support engineers from the supplier. • Critical spare components must be available locally in Pakistan. • Servers must be supplied through an OEM-authorized partner with the highest level of partnership in Pakistan. • OEM must have a minimum of ten (10) years' experience in manufacturing and supplying enterprise-grade rack mount servers. • OEM authorized partner must provide nationwide support including Islamabad, Lahore, and Karachi. • Documentary evidence required confirming availability of spare parts in Pakistan with next business day (NBD) delivery in major cities. • Firmware, software, and patch upgrades must be performed proactively during the warranty period, with review at least once per year. • All equipment must be quoted with comprehensive support including parts and labor, with year-wise breakup as per completion schedule, and no additional labor charges. Installation and configuration must be carried out by certified engineers from the supplier. Operational manuals must be provided, including operational procedures and lifecycle or replacement guidelines.

**Item:** Option-1 SAN(Storage Area Network) Expansion

**UNSPSC:** Storage area network SAN switch

**Specifications / Requirements:**

SAN Model: Dorado 8000 125TB Useable Capacity Expansion: • 8 x 30.72TB SSD NVMe Palm Encryption Disk with Caddy cases for Dorado 8000. • The capacity upgrade required as separate pool, with minimum RAID 6 protection as per OEM best practices. • Dedicated minimum 1 x hot spare for the capacity expansion pool. • The capacity expansion must be provided with existing Dorado 8000 compression and de-duplication enablers. • 3 years 24 x 7 Warranty & Support. • Faulty Disk Media Retention. BILL OF QUANTITY Sr.No Equipment Detail QUANTITY 1. Primary site : 8 x 30.72TB SSD NVMe 1 2. Secondary site : 8 x 30.72TB SSD NVMe 1 Warranty : Comprehensive post-sales support for hardware and software for three (03) years with 24x7 extendable support.

**Item:** Option-2 New SAN (Storage Area Network)

**UNSPSC:** Storage area network SAN switch

## Specifications / Requirements:

STORAGE AREA NETWORK (SAN) TECHNICAL SPECIFICATIONS Storage Type: The proposed Storage System should be Mission Critical Storage Array. SAN should be FC enabled. The proposed Storage System must be 100% redundant with no single point of failure. It must have load balancing and seamless failover capability in case of a component failure. Controllers: Proposed Storage should have dual (2) physical storage controllers, with support of scale up and scale out features to add more hardware capability on demand with Active-Active architecture. Storage systems should support true active/active LUN access and controller architecture with load balancing, load sharing features. Software upgrades must be online without any need for path failover/failback. Cache: Minimum 384 GB or higher Cache for proposed storage system. Capacity Sizing: The proposed solution must deliver a minimum of 125 TB or higher usable capacity (before compression and deduplication), built on an enterprise-grade, end-to-end NVMe architecture including NVMe SSDs. Individual SSD capacity must not exceed 8TB And Drives must be NVMe-based preferably MLC/TLC or better. Drives shall be configured in RAID 5 or RAID 6. Only physical (usable) capacity will be considered. On the above useable capacity effective Capacity must be guaranteed with a minimum ratio 2:1 or higher. Hot spares as per manufacturer best practices. • Raid group / disk group size should not be larger than 18 to reduce chances of data loss. • Hot spares as per manufacturer best practices. • Minimum 02 disks per raid group should be spared. • Additionally, global hot spare disk should be included for all raid group. • Space efficient LUN Cloning and copying. • RAID level 1, 5 or 6 should be supported if proposed solution is with traditional RAID or Dynamic RAID/equivalent. Scalability: • The solution should support at least 100 disk drives or higher. Storage should be scalable up to 250 TB usable capacity or higher without requiring additional hardware other than disks. The proposed solution should be able to handle a minimum of 20,000 IOPs or higher, with a 60% Read and 40% Write workload profile, using a 16K or higher block size." • Migration and Virtualization Storage System should be equipped with migration and virtualization licenses to ensure seamless automated migration & management of other SAN storages box from this proposed solution. Storage System must have capability to Seamless migrate data from old storage system. If virtualization of third-party SANs is not natively supported, the solution should provide tools or integration for non-disruptive migration. Encryption & De-Duplication Method • Storage System disks should be encrypted. De-Duplication and minimum 2X or higher compression must be included for the total capacity. Data Reduction Guarantee must be provided by OEM for 2:1 or higher. Storage system should be capable of compaction technology. Data Protection • The Storage System must have feature to integrated remote backup and recovery solution. • The Storage System must have zero data lose sync and A Sync replication. • The Storage System must have protected snapshot solution. • The Storage System must support application-consistent snapshots through integration with major

operating systems and enterprise applications (such as Oracle, VMware, and Microsoft), either natively or through OEM-provided tools. Anti Ransomware: • The proposed storage system must either include a native anti-ransomware protection feature or support seamless integration with an industry-standard anti-ransomware solution. In case a native feature is not available, the bidder shall provide and implement a compatible anti-ransomware solution as part of the overall offering. Host Connectivity Ports and Protocols: • Proposed storage system must have a minimum of 4 x 32Gbps FC ports per controller or higher. 4 x 10G IP Port with SFP+ Per Controller. Thin Provisioning: • Storage system should be capable of Thin/Virtual Provisioning for total storage capacity. License must be included (if required). Management Software Suite: • The proposed Storage System solution must include a comprehensive storage management toolset for administrative and system management. • The software suite must include a license to manage total capacity. Software for Trend-analysis, Reporting, and system-capacity management to provide real-time and historical storage performance data analysis and be able to pinpoint performance bottlenecks on the storage array. • Should be capable of monitoring Front end port level performance monitoring and reporting. Should be capable of monitoring LUNs level performance and reporting. • Should be capable of generating logs and keeping them for at least three months. • The software suite must have a license to monitor total capacity. License for all modules must be included (wherever required). Point-in-time copy solutions: • Storage System should provide immutabl

**Item:** LAYER II NETWORK SWITCHES (for CCU Room)

**UNSPSC:** Network switches

**Specifications / Requirements:**

Layer II, 48 Port Access Switches • Layer 2 POE enabled 48 port switches (The power budget requirement is 300 watts in order to utilize half of the POE ports) • Switching capacity 160 Gbps or higher for each box. • 10G ports x 4 or higher optical for each box (Fully populated fixed ports or Vendor will provide 10 G Multi mode SFP for each port). 10G SFPs with minimum 300-meter range in order to reach Core Layer 3 Switch. • 48 x 1G RJ-45 copper ports on each switch. • All ports must be fully populated and all required convertors, connectors, cables and all other allied accessories must be provided and installed by the supplier. • The Vendor must ensure connectivity of Access Switches with Core, and integration with existing network equipment. • Must have Latest Stable Version and should be upgradable as and when required without service disruption and outage. • Major and minor upgrade should be available. • Solution should be Enterprise grade and provide all latest deployment of switching models. • Multi-vender

interoperability. • Support for Image upgrade via FTP, TFTP and or WebUI. • Solution provides a means for exporting Configuration out of the box. • Solution should be STP free and multipathing. • Should offer line-rate traffic throughput instead of blocking architecture. • All standard protocols, QoS, IP-multicast reliability, IP v4 IPv6, VLANs. • Security, jumbo frame support, switching. • MAC and port security, i.e. Port-based, LAG port, Traffic Monitoring, VLAN-based, Filter-based and any other features. • Should offer a variety of responses including, syslog, SNMP (all versions) traps, telemetry and other latest monitoring protocols. • Should support Network traffic analysis. • should be compatible with all major/ known logging software and NMSs. • HA/Stack/Failover/Redundancy. • Support for internal and externally integrated platforms for Administrators' Authentication. • CLI (Command Line Interface). • GUI (graphical User Interface) feature will be preferred. • Role-based CLI management and access. • The switch should support role-based authentication and administration. • Provide filtering based on the IP field, source/destination IP address/subnet, and source/destination TCP/UDP port number on a per-VLAN or per-port basis. • The system should have air flow mechanism. • System should have smart OS controlled fans. • Comprehensive post-sales support for hardware, software, and licenses for three (03) years with 24×7 extendable support. Allied Network Accessories. Fiber Cables: All the cables must be protected through duct and pipes and must be properly hanged with the roof top. The quantity is as per actual and the Vendor is required to visit for the site survey and finalize all required accessories e.g Fiber cable lengths, types, cable tray and duct length estimation etc

**Item:** CCU Video Wall Option-1

**UNSPSC:** Projection screens or displays

**Specifications / Requirements:**

The CCU video wall will be installed on a 30 ft (W) × 8 ft (H) wall. The video wall shall provide high-quality display of dashboards, CCTV feeds, and other application outputs for 24×7 operations. • The solution shall provide a continuous active display area of 30 ft (W) × 8 ft (H) for 24×7 control room operations. • The solution shall be based on industrial-grade 55-inch or higher LCD video wall panels, provided that all panels within the same video wall system shall be of a single uniform size only. The final design shall ensure a consistent layout, identical aspect ratio, and maximum possible utilization of the defined 30 ft × 8 ft display area. • Panels shall be IPS-type LCD or better. • Display brightness shall be minimum 600-700 nits (typical) suitable for 24×7 control room operation. • Resolution shall be Full HD (1920 × 1080) or higher per panel. • Bezel width shall not exceed 1.8 mm (preferred); however, maximum allowable bezel shall not exceed 3.5 mm. • Video wall controller shall be hardware-based and support 4K @ 60

Hz inputs/outputs, including HDMI, DisplayPort, SDI, and AV-over-IP sources. • The system shall support multi-window layouts, drag-and-drop source management, preset scene configurations, and real-time display switching. • The solution shall support scalable expansion of at least 30–50% additional display capacity without replacement of core controller hardware. • The solution shall support integration with live CCTV feeds, dashboards, and application systems, with remote monitoring via web interface, SNMP, and dry contacts or alarm outputs for status reporting. • Comprehensive post-sales support for hardware, software, and licenses shall be provided for three (03) years with 24×7 support and option for extension. • The installed panels shall cover the primary operator visual area, while the surrounding concrete wall may remain visible in margins, subject to final approved installation design and ergonomic optimization. BILL OF QUANTITY TECHNICAL BOQ Sr.No Equipment Detail QUANTITY 1. Video Wall : 30 ft (W) × 8 ft (H). 1

**Item:** CCU Video Wall Option-2

**UNSPSC:** Projection screens or displays

**Specifications / Requirements:**

The CCU video wall will be installed on a 30 ft (W) × 8 ft (H) wall. The video wall shall provide high-quality display of dashboards, CCTV feeds, and other application outputs for 24×7 operations. • The CCU video wall shall provide a continuous active display area of 30 ft (W) × 8 ft (H) for 24×7 visualization of dashboards and application outputs. • Only COB (Chip-on-Board) Direct View LED (DVLED) technology shall be accepted. LCD, OLED, SMD/IMD LED, or any bezel-based display solutions are not permitted. • The display shall be fully seamless with no visible gaps or bezel effect, operating as a single unified canvas. • Pixel pitch shall be ≤ 1.5 mm (preferred ≤ 1.2 mm). • The system shall use modular LED cabinets with front service access, and modules shall be replaceable without dismantling the entire structure. • Brightness shall be ≥ 600 nits (adjustable) with uniform display performance across the screen. • Refresh rate shall be ≥ 3840 Hz with wide viewing angle ≥ 160°. • The system shall be designed for 24×7 continuous operation with long-life LED components and redundant power support. • The video wall shall support native resolution mapping and real-time display of multiple content sources without visual distortion. • The solution shall support integration of dashboards and application sources for continuous monitoring. • The bidder shall submit OEM datasheets confirming COB technology along with OEM authorization letter. BILL OF QUANTITY TECHNICAL BOQ Sr.No Equipment Detail QUANTITY 2. Video Wall : 30 ft (W) × 8 ft (H). 1

**Item:** VDI Solution along with all allied accessories

**UNSPSC:** Storage virtualization system

**Specifications / Requirements:**

The vendor shall provide a complete end to end VDI solution with dual screen support for all users, supporting mixed workloads including monitoring, development, integration, and operations. The solution shall be appropriately sized for concurrent heavy and light users to ensure optimal performance. All required hardware, software, licenses, configurations, and components for go live shall be included. The vendor shall deliver a fully functional, scalable, and high availability VDI environment as a turnkey solution.

**VDI SOLUTION TECHNICAL SPECIFICATIONS**

- The solution shall provide a Virtual Desktop Infrastructure (VDI) platform to deliver centralized virtual desktops for CCU operators, administrators, and monitoring users.
- The VDI solution shall support dual-monitor (dual-screen) configurations per operator session, enabling simultaneous access to multiple applications, dashboards, and monitoring interfaces without performance impact.
- The VDI solution shall be deployed on server-based compute infrastructure with internal SSD/NVMe storage. No external enterprise SAN/NAS storage is required under the standard scope; however, in case such storage is deemed mandatory based on performance or capacity requirements identified during the site survey, it shall be provided and managed by the client separately.
- The solution shall support high availability (HA) architecture with automatic failover of virtual machines in case of host failure.
- The VDI platform shall support role-based access control (RBAC) to ensure secure separation of user roles and operational privileges.
- The solution shall support access from thin clients, zero clients, and standard endpoints with secure authentication mechanisms.
- The VDI infrastructure shall support centralized image management, enabling creation, update, and deployment of standard desktop images across all users.
- The solution shall support GPU acceleration (if required by workload) for graphical dashboards and visualization applications.
- A mandatory site survey shall be conducted by the bidder to assess user load, application requirements, and infrastructure readiness prior to final sizing.
- Based on the site survey, the bidder shall be responsible for providing the final sizing of compute, memory, and storage resources required for stable VDI performance.
- The VDI solution shall support secure remote access (VPN/SSL-based or equivalent secure gateway) for authorized users, if required.
- The system shall support session persistence and non-persistence desktop models based on operational requirements.
- The solution shall include centralized monitoring, logging, and performance analytics for all virtual desktop sessions.
- Network switches will be provided by the client as baseline infrastructure, subject to validation during site

survey. In case of insufficiency, the bidder shall propose additional network components required for performance assurance. • The bidder shall be fully responsible for end-to-end VDI performance, user experience, and system stability over the final approved architecture. • The VDI solution shall include three (03) years comprehensive support for hardware, software, and licenses with 24x7 assistance and option for extension

**Item:** Veeam Backup & Replication Enterprise Plus or Equivalent

**UNSPSC:** Backup or archival software

**Specifications / Requirements:**

Veeam Licenses Veeam Backup & Replication Enterprise Plus (or equivalent) with Universal License (VUL) for 12 virtual machines covering Primary and Disaster Recovery environments, Requirements: • The bidder shall provide 12 additional Veeam Backup & Replication licenses compatible with the existing deployed environment. • Proposed licenses shall be genuine, new, and sourced through authorized OEM channels. • Licenses shall support the currently deployed Veeam Backup & Replication platform and existing infrastructure. • Solution shall support VMware vSphere 7.x and 8.x and 9.x environments. • License shall support integration with the existing Veeam Backup & Replication deployment without requiring replacement or reconfiguration of the existing setup. • The bidder shall ensure compatibility with the existing backup repositories, replication jobs, backup policies, and management console. • All licenses shall include OEM-backed subscription/support coverage for the required contract period. • OEM authorization letter must be provided with the bid submission. • The bidder shall provide installation/configuration assistance and post-deployment support

## Price Schedule

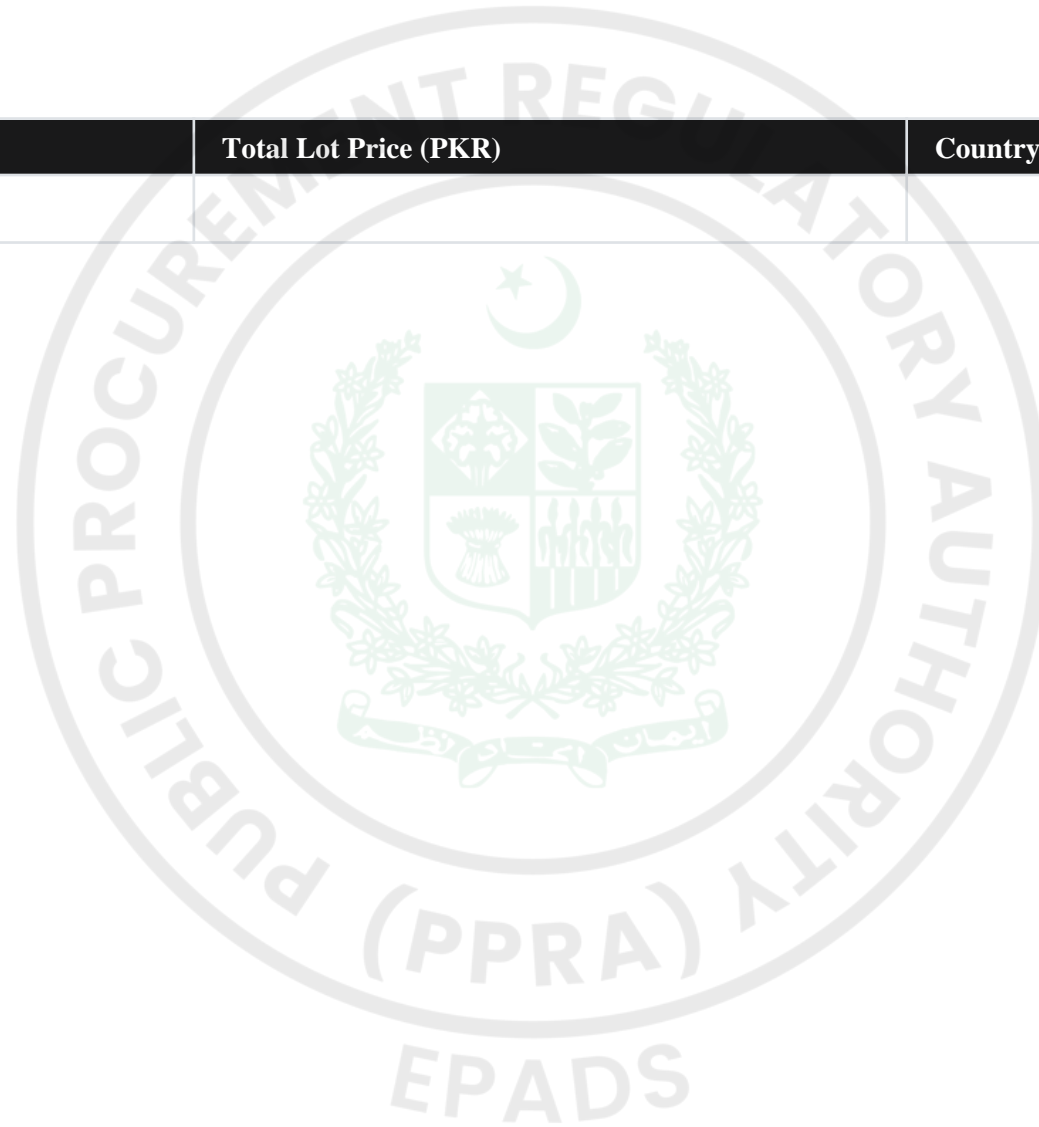
**For Individual Items**

#	Item Title	Quantity	Unit Price (PKR)	Total Price (PKR)	Delivery Location	Delivery Period / Year	Country of Origin
1							

#	Item Title	Quantity	Unit Price (PKR)	Total Price (PKR)	Delivery Location	Delivery Period / Year	Country of Origin
2							

**For Lots**

#	Lot Title	Total Lot Price (PKR)	Country of Origin
1	[Lot 1 Title]		







## General Conditions of Contract

## A. General

### 1. Definitions

1.1 Unless the context otherwise requires, the following terms whenever used in this Contract shall have the same meaning and shall be interpreted as indicated

1. "Applicable Law" means the laws and any other instruments having the force of law in the Government's Country, or in such other country as may be specified in the Special Conditions of the Contract (SC), as they may be issued and in force from time to time;
2. "Procuring Agency" means:-
  - 2.1. any Ministry, Division, Department or any Office of the Government;
  - 2.2. any authority, corporation, body or organization established by or under a Law or which is owned or controlled by the Government;
3. "The Contract" means an agreement enforceable by law;
4. "The Contract Price" means the price payable to the Bidder under the Contract for the full and proper performance of its contractual obligations;
5. "Ancillary Services" means those services ancillary to the provision of Goods, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training, and other such obligations of the Bidder covered under the Contract;
6. "GCC" means the General Conditions of Contract contained in this section;
7. "SCC" means the Special Conditions of Contract by which the GCC may be amended or supplemented;
8. "Day" means calendar day unless indicated otherwise.
9. "Effective Date" means the date on which this Contract comes into force and effect.
10. "The Bidder" means the individual or corporate body whose Bids to provide the Goods has been accepted by the Procuring Agency;
11. "The Project Site," where applicable, means the place or places named in Bids Data Sheet and technical Specifications;
12. "Government" means the Government of Pakistan;
13. "Subcontractor" means any entity to which the Bidder subcontracts any part of the Goods.
14. "Service" means any object of procurement other than goods or works;
15. "Party" means the Procuring Agency or the Bidder, as the case may be, and "Parties" means both of them;
16. "Foreign Currency" means any currency other than the currency of the country of the Procuring Agency;

17. "Completion Date" means the date of completion of the contract by the Bidder as certified by the Procuring Agency;

18. "In Writing" means communicated in written form with proof of receipt;

19. "Local Currency" means the currency of Pakistan;

## **2. Application and Interpretation**

2.1 These General Conditions shall apply to the extent that they are not superseded by provisions of other parts of the Contract.

2.2 In interpreting these Conditions of Contract headings and marginal notes are used for convenience only and shall not affect their interpretations unless specifically stated; references to singular include the plural and vice versa; and masculine include the feminine. Words have their ordinary meaning under the language of the Contract unless specifically defined.

## **3. Applicable Law**

3.1 The contract shall be governed and interpreted in accordance with the laws of Pakistan, unless otherwise specified in SCC.

## **4. Governing Language**

4.1 The Contract as well as all correspondence and documents relating to the Contract exchanged between the Bidder and the Procuring Agency, shall be written in the **English language** unless otherwise stated in the SCC. Supporting documents and printed literature that are part of the Contract may be in another language provided these are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Contract, this translation shall govern.

## **5. Notices**

5.1 Any notice, request, or consent made pursuant to this Contract shall be in writing and shall be deemed to have been made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, telex, telegram, or facsimile to such Party at the address specified in the SCC.

## **6. Delivery/Location**

6.1 The Goods shall be delivered to such locations as the Procuring Agency may approve and as specified in SCC.

## **7. Authorized Representatives / Authority of Member in charge**

7.1 Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Procuring Agency or the Bidder may be taken or executed by the officials specified in the SCC.

## **B. Commencement, Completion, Modification, and Termination of Contract**

### **8. Effectiveness of Contract**

8.1 This Contract shall come into effect on the date the Contract is signed by both parties and such other later date as may be stated in the SCC.

## **9. Commencement of Services**

9.1 The Bidder shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the SCC.

## **10. Program**

10.1 Before commencement of the Services, the Bidder shall submit to the Procuring Agency for approval a Program showing the general methods, arrangements, order and timing for all activities. The Services shall be carried out in accordance with the approved Program as updated.

## **11. Starting Date/Expiration Date**

11.1 The Bidder shall start carrying out the Services Five (05) days after the date the Contract becomes effective, or at such other date as may be specified in the SCC.

11.2 Unless terminated earlier pursuant to Clause **GCC 15** hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the SCC.

## **12. Entire Agreement**

12.1 This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

## **13. Modification**

13.1 Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any Bids for modification or variation made by the other Party.

13.2 In cases of any modifications or variations, the prior written consent of the Procuring Agency is required.

## **14. Force Majeure**

### **14.1 Definition**

For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party and which makes a Party's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.

### **14.2 No Breach of Contract**

The failure of a Party to fulfill any of its obligations under the contract shall not be considered to be a breach of, or default under, this Contract in so far as such inability arises from an event of Force Majeure, provided that the Party affected by such an event (a) has taken all reasonable precautions, due care and reasonable alternative measures in order to carry out the terms and conditions of this Contract, and (b) has informed the other Party as soon as possible about the occurrence of such an event.

### **14.3 Extension of Time**

Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result

of Force Majeure.

## **14.4 Payments**

During the period of their inability to perform the Services as a result of an event of Force Majeure, the Bidder shall be entitled to continue to be paid under the terms of this Contract, as well as to be reimbursed for additional costs reasonably and necessarily incurred by them during such period for the purposes of the Services and in reactivating the Service after the end of such period.

## **15. Termination**

### **15.1 By the Procuring Agency**

The Procuring Agency may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (e) of this Clause. In such an occurrence the Procuring Agency shall give at least thirty (30) calendar days' written notice of termination to the Bidder in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e);

1. If the Bidder fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension;
2. If the Bidder becomes (or, if the Bidder consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;
3. If the Bidder fails to comply with any final decision reached as a result of arbitration proceedings;
4. If, as the result of Force Majeure, the Bidder is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;
5. If the Procuring Agency, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

### **15.2 By the Bidder**

The Bidder may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Procuring Agency, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

1. If the Procuring Agency fails to pay any money due to the Bidder pursuant to this Contract and not subject to dispute within forty-five (45) calendar days after receiving written notice from the Bidder that such payment is overdue.
2. If, as the result of Force Majeure, the Bidder is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.
3. If the Procuring Agency fails to comply with any final decision reached as a result of arbitration.
4. If the Procuring Agency is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Bidder may have subsequently approved in writing) following the receipt by the Procuring Agency of the Bidder's notice specifying such breach.

## **C. Obligations of the Bidder**

## **16. General**

### **16.1 Standard of Performance**

1. The Bidder shall deliver the product and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Bidder shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Procuring Agency, and shall at all times support and safeguard the Procuring Agency's legitimate interests in any dealings with the third parties.

### **16.2 Law Applicable to Goods**

The Bidder shall deliver the goods in accordance with the Contract and in accordance with the Law of Pakistan and shall take all practicable steps to ensure that any of its Experts and Sub-Bidders, comply with the Applicable Law.

## **17. Conflict of Interests**

### **17.1 Bidder Not to Benefit from Commissions and Discounts.**

The remuneration of the Bidder shall constitute the Bidder's sole remuneration in connection with this Contract or the Services, and the Bidder shall not accept for their own benefit any trade commission, discount, or similar payment in connection with activities pursuant to this Contract or to the Services or in the discharge of their obligations under the Contract, and the Bidder shall use their best efforts to ensure that the Personnel, any Subcontractors, and agents of either of them similarly shall not receive any such additional remuneration.

### **17.2 Bidder and Affiliates Not to be Otherwise Interested in Project**

The Bidder agree that, during the term of this Contract and after its termination, the Bidder and its affiliates, as well as any Subcontractor and any of its affiliates, shall be disqualified from providing Goods for any project resulting from or closely related to the Services.

### **17.3 Prohibition of Conflicting Activities**

Neither the Bidder nor its Subcontractors nor the Personnel shall engage, either directly or indirectly, in any of the following activities:

1. during the term of this Contract, any business or professional activities in the Government's country which would conflict with the activities assigned to them under this Contract;
2. during the term of this Contract, neither the Bidder nor their Subcontractors shall hire public employees in active duty or on any type of leave, to perform any activity under this Contract;

## **18. Confidentiality**

18.1 Except with the prior written consent of the Procuring Agency, the Bidder and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the contract.

## **19. Insurance to be Taken Out by the Bidder**

19.1 The Bidder(a) shall take out and maintain, and shall cause any Subcontractors to take out and maintain, at its (or the Subcontractors', as the case may be) own cost but on terms and conditions approved by the Procuring Agency, insurance against the risks, loss or damage, and for the coverage, as shall be specified in the SCC; and (b) at the Procuring Agency's request, shall provide evidence to the Procuring Agency showing that such insurance has been taken out and maintained and that the current premiums have been paid.

## **20. Bidder's Actions Requiring Procuring Agency's Prior Approval**

20.1 The Bidder shall obtain the Procuring Agency's prior approval in writing before taking any of the following actions:

- (a) appointing such members of the Personnel not provided by the Bidder;
- (b) changing the Program of activities; and
- (c) any other action that may be specified in the SCC.

## **21. Reporting Obligations**

21.1 The Bidder shall submit to the Procuring Agency the reports and documents in the numbers, and within the periods as prescribed by the Procuring Agency.

## **22. Liquidated Damages**

22.1 If the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Procuring Agency shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the performance security (or guarantee) specified in SCC. Once the said maximum is reached, the Procuring Agency may consider termination of the Contract pursuant to **GCC Clause 15**.

### **22.2 Correction for Over-payment**

If the Intended Completion Date is extended after liquidated damages have been paid, the Procuring Agency shall correct any overpayment of liquidated damages by the Bidder by adjusting the next payment certificate. The Bidder shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in SCC.

### **22.3 Lack of performance penalty**

If the Bidder has not corrected a Defect within the time specified in the Procuring Agency's notice, a penalty for Lack of performance will be paid by the Bidder. The amount to be paid will be calculated as a percentage of the cost of having the Defect corrected, assessed as specified in the SCC.

## **23. Performance Guarantee**

23.1 Within Seven (07) days from the issuance of acceptance letter from the Procuring Agency, the successful Bidder shall furnish the Performance Guarantee in shape of ----- at the discretion of the PA in the amount **specified in SCC**. In case the amount of Bids security is equal or greater than

23.2 The proceeds of the Performance Guarantee shall be payable to the Procuring agency as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

23.3 The Performance Guarantee shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to the Procuring agency and shall be in the acceptable form as specified in SCC.

23.4 The Performance Guarantee will be discharged by the Procuring agency and returned to the Supplier not later than thirty (30) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless otherwise **specified in SCC**.

## **24. Fraud and Corruption**

24.1 The Procuring Agency requires the Supplier to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the Bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

## **25. Sustainable Procurement**

25.1 The Bidder shall conform to the sustainable procurement contractual provisions, if and as specified in the SCC.

## **D. Bidder's Personnel**

### **26. Description of Personnel**

26.1 The titles, agreed job descriptions, minimum qualifications, and estimated periods of engagement in the carrying out of the Services of the Bidder's Key Personnel. The Key Personnel listed by title as well as by name are hereby approved by the Procuring Agency.

### **27. Removal and/or Replacement of Personnel**

27.1 Except as the Procuring Agency may otherwise agree, no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Bidder, it becomes necessary to replace any of the Key Personnel, the Bidder shall provide as a replacement a person of equivalent or better qualifications.

27.2 If the Procuring Agency finds that any of the Personnel have (i) committed serious misconduct or have been charged with having committed a criminal action, or (ii) have reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Bidder shall, at the Procuring Agency's written request specifying the grounds thereof, provide as a replacement a person with qualifications and experience acceptable to the Procuring Agency.

27.3 The Bidder shall have no claim for additional costs arising out of or incidental to any removal and/or replacement of Personnel.

## **E. Obligations of the Procuring Agency**

### **28. Assistance and Exemptions**

28.1 The Procuring Agency shall use its best efforts to ensure that the Government shall provide the Bidder such assistance and exemptions as specified in the SCC.

### **29. Change in the Applicable Law**

29.1 If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost of the related Services rendered by the Bidder, then the remuneration and reimbursable expenses otherwise payable to the Bidder under this Contract shall be increased or decreased accordingly by agreement between the Parties, and corresponding adjustments shall be made to the amounts referred in the SCC.

### **30. Services and Facilities**

30.1 The Procuring Agency shall make available to the Bidder and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described , at the times and in the manner specified in the SCC or terms of reference.

30.2 In case that such services, facilities and property shall not be made available to the Bidder, the Parties shall agree on (i) any time extension that it may be appropriate to grant to the Bidder for the performance of the Services, (ii) the manner in which the Bidder shall procure any such services, facilities and property from other sources, and (iii) the additional payments, if any, to be made to the Bidder as a result thereof.

## **F. Payments to the Bidder**

### **31. Contract Price**

31.1 The price payable shall be in Pakistani Rupees unless otherwise specified in the SCC. Prices charged by the Supplier for Goods delivered under the Contract shall not vary from the prices quoted by the Supplier in its Bid.

### **32. Terms and Conditions of Payment**

32.1 Payments will be made to the Bidder according to the payment schedule stated in the SCC and as per actual invoice submitted by the Bidder.

32.2 Unless otherwise stated in the SCC, the advance payment shall be made against the provision by the Bidder of a bank guarantee for the same amount, and shall be valid for the period stated in the SCC. Any other payment shall be made after the conditions listed in the SCC for such payment have been met, and the Bidder have submitted an invoice to the Procuring Agency specifying the amount due.

### **33. Currency of Payment**

33.1 Any payment under this Contract shall be made in the currency(ies) specified in the SCC.

## **G. Quality Control**

### **34. Identifying Defects**

34.1 The principle and modalities of Inspection of the Goods by the Procuring Agency shall be as indicated in the SCC. The Procuring Agency shall check the Bidder's performance and notify him of any Defects that are found. Such checking shall not affect the Bidder's responsibilities. The Procuring Agency may instruct the Bidder to search for a Defect and to uncover and test any service that the Procuring Agency considers may have a Defect. Defect Liability Period is as defined in the SCC.

### **35. Correction of Defects, and**

#### **Lack of Performance Penalty**

35.1 The Procuring Agency shall give notice to the Bidder of any Defects before the end of the Contract. The Defects liability period shall be extended for as long as Defects remain to be corrected.

35.2 Every time notice a Defect is given, the Bidder shall correct the notified Defect within the length of time specified by the Procuring Agency's notice.

35.3 If the Bidder has not corrected a Defect within the time specified in the Procuring Agency's notice, the Procuring Agency will assess the cost of having the Defect corrected, the Bidder will pay this amount, and a Penalty for Lack of Performance.

### **36. Taxes and Duties**

36.1 A Supplier shall be entirely responsible for all taxes, duties, fees, etc., incurred until delivery of the contracted Goods to the Procuring Agency.

## **H. Settlement of Disputes**

### **37. Alternate Dispute Resolution**

37.1 The disputes between the parties to the contract may be settled in accordance with Public Procurement Rules, 2004.

37.2 The procuring agency shall refer the matter to the Chief Justice Islamabad High Court or Managing Director PPRA or the Secretary Ministry of Law & Justice for appointment of Arbitrator.

37.3 The fee for the Arbitrator shall be specified in Pak Rupees as determined by the appointing authority which shall be borne and shared equally by the contracting parties.



## Special Conditions of Contract

## **SECTION VIII. SPECIAL CONDITIONS OF CONTRACT**

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the Conditions of Contract. The corresponding clause number of the GCC is indicated in parentheses.

### ***Number of GC Clause***

### ***Amendments of, and Supplements to, Clauses in the General Conditions of Contract***

### **Number of GC Clause 1**

#### **Definitions**

**The Procuring Agency is:** Pakistan Revenue Automation Pvt Limited (Pakistan Revenue Automation Pvt Limited), Manager PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory

#### **The Supplier is:**

**The title of the subject procurement is:** Tender No. P-13/2026 To Build and Operate a Central Control Unit (CCU) for Digital Interventions

### **Number of GC Clause 3**

#### **Applicable/Governing Law:**

The Contract shall be interpreted in accordance with the laws of Islamic Republic of Pakistan

### **Number of GC Clause 4**

#### **Language:**

The language of the Contract, all correspondence and communications to be given, and all other documentation to be prepared and supplied under the Contract shall be in **English**.

### **Number of GC Clause 5**

#### **Notices:**

#### **The addresses for the notices are:**

Procuring Agency:

Pakistan Revenue Automation Pvt Limited (Pakistan Revenue Automation Pvt Limited), Manager PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory  
+92-334-531-4503  
procurement@pral.com.pk

Contractor/ Bidder:

[Name, address and telephone number].

The Contractor/ Bidder's Representative(s)

[Name, address, telephone number and e-mail address]

**Number of GC Clause 7.1**

**The Authorized Representatives are:**

**For the Procuring Agency:**

Pakistan Revenue Automation Pvt Limited (Pakistan Revenue Automation Pvt Limited), Manager  
PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory  
+92-334-531-4503  
procurement@pral.com.pk

**For the Bidder:**

**Name:** .....

**Designation:** .....

**Address:** .....

**Number of GC Clause 8**

**Effectiveness of the contract**

**Number of GC Clause 9**

**Commencement of Contract:**

**Number of GC Clause 11.2**

**Expiration of Contract:**

**Number of GC Clause 15**

**Termination**

In the event of termination of the contract due to any reason as already defined in the General Conditions of Contract, the Bidder shall be responsible for providing to the Authority the Goods till the time of alternate arrangements.

**Number of GC Clause 17**

**Conflict of Interest:**

The Procuring Agency reserves the right to determine on a case-by-case basis whether the Bidder should be disqualified from providing goods or services due to a conflict of a nature described in Clause GCC 17.

**Number of GC Clause 22**

**Liquidated Damages**

If the Bidder fails to provide services as required under the contract or in case of any data loss/data breach or any incident compromising the data security or other such failures related to any services, the Bidder shall pay to the Procuring Agency as Liquidated Damages at a rate of **0.10%** to **0.50%** of the Contract value, in accordance with the extent of performance failure & the cost of investigating such incidents as judged by the

Authority.

### **Number of GC Clause 23**

#### **Performance Guarantee:**

The amount of performance guarantee shall be **5.00%** of the contract price in acceptable form of **Bank Guarantee**

### **Number of GC Clause 32**

#### **Payment terms:**

Payment will be made to the Bidder against the procured Goods and services according to the actual invoice or running bills submitted by the Bidder against the services provided within the time given in the conditions of the contract.

### **Number of GC Clause 33**

#### **Currency of Payment:**

All the payment to be released to the contractor/Bidder shall be in Pakistani Rupees.

### **Number of GC Clause 34**

#### **Identifying Defects:**

The Authority reserves the right at any time to inspect the premises of the provider to inspect the goods and monitor the goods being provided.

### **Inspections & Tests Requirements**

For being Brand New, bearing relevant reference numbers of the equipment (Certificate from supplier)

For Physical Fitness having No Damages (Certificate from supplier)

For the Country of Origin as quoted by the Supplier (Certificate from manufacturer)

For conformance to specifications and performance parameters, through Prior to delivery inspection (Inspection Report by Procurement Committee / Inspection Team)

For successful operation at site after complete installation, testing and commissioning of the equipment (Installation, Testing and Commissioning Report by Procurement Committee / Inspection Team)

### **Delivery & Documents**

Copies of the Supplier's invoice showing Goods' description, quantity, unit price, and total amount;

Manufacturer's or Supplier's Valid Warranty Certificate;

Certificate of Origin.

## **Number of GC Clause 37**

### **Following is the guidance for Dispute Resolution**

1. If any dispute of any kind whatsoever shall arise between the Authority and the Bidder in connection with or arising out of the Contract, including without prejudice to the generality of foregoing, any question regarding its existence, validity, termination and the execution of the Contract – whether during developing phase or after their completion and whether before or after the termination, abandonment or breach of the Contract – the parties shall seek to resolve any such dispute or difference by mutual diligent negotiations in good faith within 14 (fourteen) days following a notice sent by one Party to the other Party in this regard.
2. At future of negotiation the dispute shall be resolved through mediation and mediator shall be appointed with the mutual consent of the both parties.
3. At the event of failure of mediation to resolve the dispute relating to this contract such dispute shall finally be resolved through binding Arbitration by sole arbitrator in accordance with Arbitration Act 1940. The arbitrator shall be appointed by mutual consent of the both parties. The Arbitration shall take place in Islamabad, Pakistan and proceedings will be conducted in English language.
4. The cost of the mediation and arbitration shall be shared by the parties in equal proportion however the both parties shall bear their own costs and lawyer's fees regarding their own participation in the mediation and arbitration. However, the Arbitrator may make an award of costs upon the conclusion of the arbitration making any party to the dispute liable to pay the costs of another party to the dispute.
5. Arbitration proceedings as mentioned in the above clause regarding resolution of disputes may be commenced prior to, during or after completion of the contract.

Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree that the Authority shall pay the Bidder any monies due to the Bidder.

#### **Rules of procedure for arbitration proceedings:**

Any dispute between the Authority and a Bidder who is a national of the Islamic Republic of Pakistan arising in connection with the present Contract shall be referred to adjudication or arbitration in accordance with the laws of the Islamic Republic of Pakistan including Arbitration Act 1940, however above provision shall prevail in referring the case to the Arbitrator.

#### **Place of Arbitration and Award:**

The arbitration shall be conducted in English language and place of arbitration shall be at Islamabad. The award of the arbitrator shall be final and shall be binding on the parties.



Bid Securing Declaration

## Form 9: Bid Securing Declaration

Date: *[insert date (as day, month and year)]*

Bid No.: **P30122**

To: **Pakistan Revenue Automation Pvt Limited (Pakistan Revenue Automation Pvt Limited), Manager PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory**

We, the undersigned, declare that:

We understand that, according to your conditions, Bids must be supported by a Bid Securing Declaration.

We accept that we will be blacklisted and henceforth cross debarred for participating in respective category of public procurement proceedings for a period of (not more than) six months, if fail to abide with a bid securing declaration, however without indulging in corrupt and fraudulent practices, if we are in breach of our obligation(s) under the Bid conditions, because we:

1. have withdrawn or modified our Bid during the period of Bid Validity specified in the Form of Bid;
2. Disagreement to arithmetical correction made to the Bid price; or
3. having been notified of the acceptance of our Bid by the Procuring Agency during the period of Bid Validity, (i) failure to sign the contract if required by Procuring Agency to do so or (ii) fail or refuse to furnish the Performance Security or to comply with any other condition precedent to signing the contract specified in the Bidding Documents.

We understand this Bid Securing Declaration shall expire if we are not the successful

Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight (28) days after the expiration of our Bid.



Contract Form

## SECTION IX: CONTRACT FORMS

THIS AGREEMENT made the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_ between **Pakistan Revenue Automation Pvt Limited (Pakistan Revenue Automation Pvt Limited), Manager PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory**

(hereinafter called “the Procuring Agency”) of the one part and [name of Bidder] of [city and country of Bidder] (hereinafter called “the Bidder”) of the other part:

WHEREAS the Procuring Agency invited Bids for provision of goods, viz., **Tender No. P-13/2026 To Build and Operate a Central Control Unit (CCU) for Digital Interventions (P30122)** and has accepted a Bids by the Bidder for the provision of Goods in the sum of [contract price in words and figures] (hereinafter called “the Contract Price”).

### NOW THIS CONTRACT WITNESSETH AS FOLLOWS:

1. In this Contract words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Contract, In the event of any ambiguity or conflict between the Contract Documents listed below, the order of precedence shall be the order in which the Contract Documents are listed below:-

1. This form of Contract;
2. the Form of Bids and the Price Schedule submitted by the Bidder;
3. the Schedule of Requirements;
4. the Technical Specifications;
5. the Special Conditions of Contract;
6. the General Conditions of the Contract;
7. the Procuring Agency’s Letter of Acceptance; and
8. [add here: any other documents]

3. In consideration of the payments to be made by the Procuring Agency to the Bidder as hereinafter mentioned, the Bidder hereby covenants with the Procuring Agency to provide the Goods related services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Procuring Agency hereby covenants to pay the Bidder in consideration of the provision of Goods and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Contract to be executed in accordance with their respective laws the day and year first above written.

Signed, sealed, delivered by \_\_\_\_\_ the \_\_\_\_\_ (for the Procuring Agency)

Witness to the signatures of the Procuring Agency:

.....

Signed, sealed, delivered by \_\_\_\_\_ the \_\_\_\_\_ (for the Procuring Agency)

Witness to the signatures of the Bidder: .....





Integrity Pact

## Integrity Pact

### **DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BY THE SUPPLIERS OF GOODS, SERVICES & WORKS IN CONTRACTS WORTH RS.10.00 MILLION OR MORE**

**Contract Number:** Contract Value: Contract Title:

Dated:

[Name of Supplier] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoP) through any corrupt business practice.

Without limiting the generality of the foregoing [Name of Supplier] represents and warrants that it has fully declared the brokerage, commission, fee etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultations fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[Name of Supplier] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representative or warranty.

[Name of Supplier] accepts full responsibility and strict liability for making and false declaration, not making full disclosure, misrepresenting fact or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, [Name of Supplier] agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.



## Performance Guarantee Form

## Performance Guarantee Form

To: **Pakistan Revenue Automation Pvt Limited (Pakistan Revenue Automation Pvt Limited), Manager PRAL Head Office, 2nd Floor, STP Building, Service Road North, Sector I-9/3., Islamabad Capital Territory**

WHEREAS *[name of Bidder]* (hereinafter called “the Bidder”) has undertaken, in pursuance of Contract No. *[reference number of the contract]* dated *[insert date]* for provision of Goods (hereinafter called “the Contract”).

AND WHEREAS it has been stipulated by you in the said Contract that the Bidder shall furnish you with a Bank Guarantee by a reputable bank for the sum specified therein as security for compliance with the Bidder’s performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the Bidders guarantee:

THEREFORE, WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Bidder, up to a total of *[amount of the guarantee in words and figures]*, and we undertake to pay you, upon your first written demand declaring the Bidder to be in default under the Contract and without cavil or argument, any sum or sums within the limits of *[amount of guarantee]* as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the: *[insert date]*

Signature and seal of the Guarantors

---

*[name of bank or financial institution]*

---

*[address]*

---

*[date]*



Annexure

## Lot/Item 1

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 1** (page number: 81)

## Lot/Item 2

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 2** (page number: 132)

## Lot/Item 3 Option 1

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 3 Option 1** (page number: 137)

## Lot/Item 3 Option 2

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 3 Option 2** (page number: 141)

## Lot/Item 4

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 4** (page number: 150)

## Lot/Item 5 Option 1

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 5 Option 1** (page number: 155)

## Lot/Item 5 Option 2

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 5 Option 2** (page number: 159)

## Lot/Item 6

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 6** (page number: 163)

## Lot/Item 7

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 7** (page number: 167)

## Lot/Item 1

Financial Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 1** (page number: 170)

## Lot/Item 2

Financial Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 2** (page number: 171)

## Lot/Item 3 Option 1

Financial Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 3 Option 1** (page number: 172)

## Lot/Item 3 Option 2

Financial Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 3 Option 2** (page number: 173)

## Lot/Item 4

Financial Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 4** (page number: 174)

## Lot/Item 5 Option 1

Financial Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 5 Option 1** (page number: 175)

## Lot/Item 5 Option 2

Financial Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 5 Option 2** (page number: 176)

## Lot/Item 6

Financial Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 6** (page number: 177)

## Lot/Item 7

Financial Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Lot/Item 7** (page number: 178)

## Performance Certificate

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Performance Certificate** (page number: 179)

## Beneficial Ownership Form

Technical Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Beneficial Ownership Form** (page number: 180)



## Procurement Forms

## Past Experience and Completed Contracts

See Form Under Additional Forms and Documents: **Past Experience and Completed Contracts** (page number: 182)

## Current Contracts and Their Progress

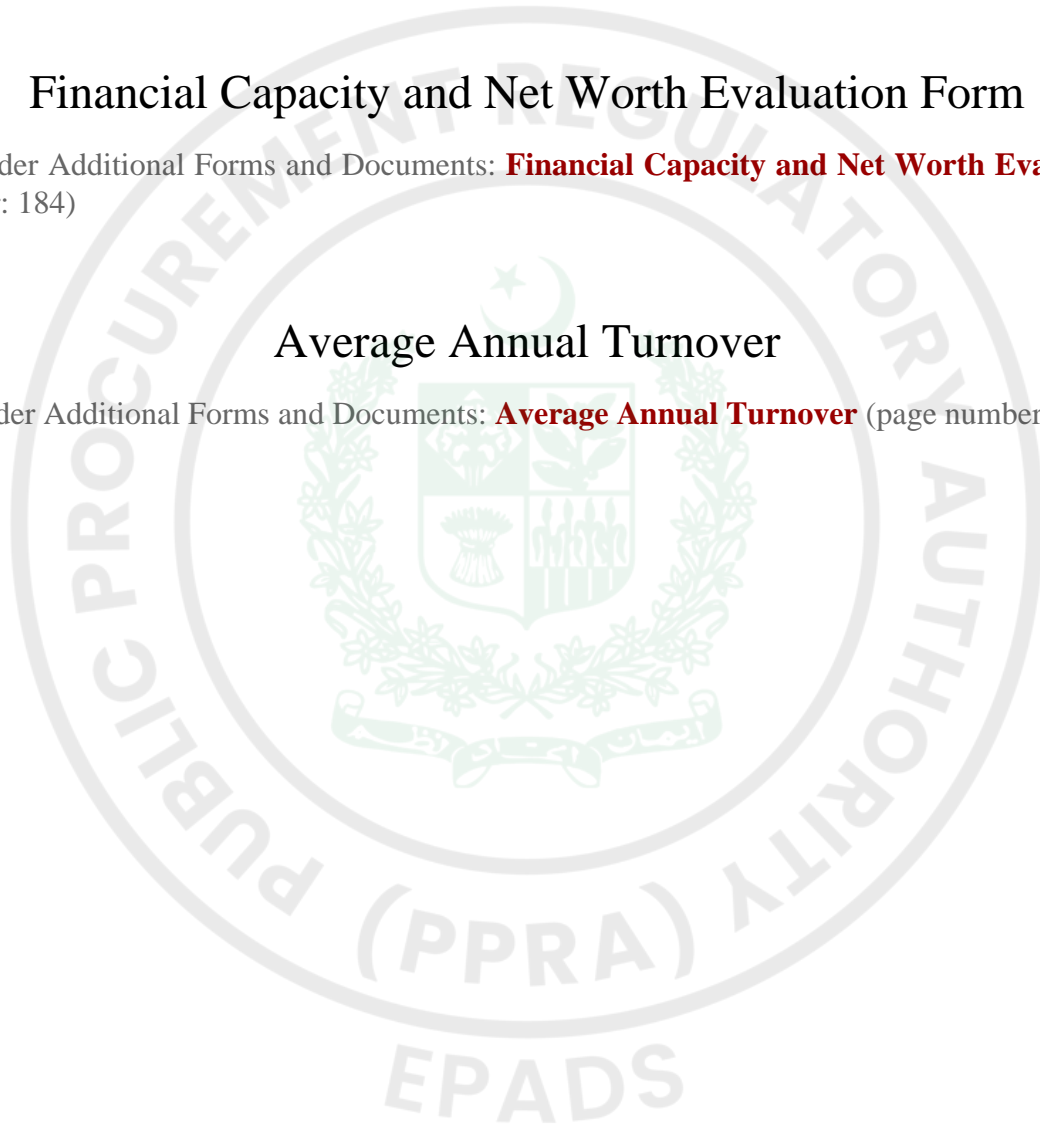
See Form Under Additional Forms and Documents: **Current Contracts and Their Progress** (page number: 183)

## Financial Capacity and Net Worth Evaluation Form

See Form Under Additional Forms and Documents: **Financial Capacity and Net Worth Evaluation Form** (page number: 184)

## Average Annual Turnover

See Form Under Additional Forms and Documents: **Average Annual Turnover** (page number: 186)







## Additional Forms and Documents

## Overview section

PRAL issues this RFP to procure, implement, and operationalize a fully on-premise, end-to-end real-time analytical Command and Control Unit (CCU) to support enforcement, compliance monitoring, and operational decision-making. The CCU shall function as a real-time operational nerve center providing continuous situational awareness, threshold-based alerting, and data-driven visibility across all deployed and future digital interventions. The CCU shall not function as an enterprise data repository or authoritative system of record for any FBR transactional system. This section constitutes the comprehensive technical and commercial specifications for the Software, System Implementation, Operations, and Ongoing Support Services required for the CCU ecosystem. The Vendor is responsible for the complete lifecycle of the solution, ensuring that all support items and operational services are delivered in full alignment with the in-scope requirements

### **In Scope**

- a. Supply of all software components across the full five-layer CCU architecture: Data Ingestion, Message Broker, Stream Processing Engine, Analytical Store, and Visualization.
- b. Supply of all enterprise software licenses + licenses for the underlying operating systems with the solutions for production operation across all components for the full contract duration. No component shall be left unlicensed or subject to separate FBR procurement.
- c. End-to-end implementation across all five layers on FBR-provisioned virtual machines, covering installation, configuration, integration, data modeling, pipeline and stream processing development, dashboard development, and performance tuning.
- d. Integration with existing and future FBR digital interventions, including production tracking cameras, scanners, digital invoicing systems, POS networks, and Digital Enforcement Stations.

- e. Development of operational dashboards, KPI panels, drill-down analytical views, and threshold-based alerting aligned to FBR operational requirements.
- f. Knowledge transfer, training, and technical documentation upon solution acceptance.
- g. Software support, patch management, and operational co-management for the full three-year contract duration.
- h. The Vendor shall also be responsible for **fully staffing and operating** the Central Control Unit (CCU), including deployment of a dedicated operational team to monitor system uptime, oversee incoming data feeds from digital interventions, manage alerts, and support operational coordination.
- g. All support services and adherence to Service Level Agreements (SLAs) fall within the vendor's scope of work

### **Out of Scope**

- a. Physical server, storage, and networking hardware. Covered under a separate hardware LOT.
- b. FBR shall provision the VM Hypervisor per the vendor's formal sizing specification that is mutually agreed upon. But vendor is responsible to provide BOQ for the operating system licenses on which their proposed solutions will run. This is because it is possible that a certain component requires for example Red Hat OS, Windows Server, Ubuntu, Suse Linux etc.
- c. CCU facility infrastructure including video walls, operator monitors, and workstations. Covered under a separate infrastructure LOT.

### **General Obligations**

The awarded vendor shall assume full responsibility for the functional completeness, performance, integration correctness, and operational readiness of the software solution from ingestion through visualization. Partial or component-only delivery shall not be accepted, and performance shortfalls shall not be attributed to the hardware or VM environment unless the provisioned

infrastructure demonstrably fails to meet the vendor's formally submitted and FBR-accepted sizing specification. The contract shall have an initial term of three (3) years from the date of Operational Acceptance, during which all operating system licenses, software licenses, support obligations, and operational responsibilities shall remain fully in effect without interruption. All components, pipelines, models, dashboards, and processes delivered under this LOT shall operate exclusively within FBR's designated on-premise, and no data shall be transmitted, stored, processed, or cached outside the FBR internal network perimeter at any point.

### INTEGRATION TARGET INVENTORY

This section defines the mandatory inventory of FBR digital interventions that the vendor shall integrate into the CCU data pipeline. The vendor shall design all ingestion pipelines, schema mappings, and data models to accommodate every listed source from day one of go-live. Please note that the list is non-exhaustive.

<b>Intervention name</b>	<b>Description</b>	<b>Sample data analysis and visualizations</b>
Production Tracking & Trace	Counting of goods produced at various manufacturing sites across key industries	Count of produced items (bags, bales etc.), no. of taxpayer sites with solution deployed, Alerts (e.g., for hardware, production drops), Production count (filterable by line, period, SKU), scanner status, deviations, potential manipulations
Point of Sales	Integration of FBR system with POS solution of provinces (restaurants, services)	Number of transactions (filterable by geography, tax-office, period), deviations, national heatmap, revenue collection

Digital Invoicing	E-invoicing across FMCG, public sector, and other priority sectors	Integrations status by Licensed integrator, Invoices generated (filterable by taxpayer, period, invoice type), integration status, API uptime, tax return comparison
Cargo Tracking System	Tracking movement of priority goods via e-way billing for suppliers, transporters, buyers	EWBs generated, route heatmap, integration status, vehicle risk status, value triangulation to DI
Digital Enforcement Station	Checkposts across major chokepoints in Indus and Balochistan to counter smuggling	Inspections and impounded vehicles at key checkpoints, enforcement coverage
Faceless Assessment	Automated and anonymous clearance of goods	Number of GD's filed, number of documents called (vs. exempted), average clearance time, revenue collection
CRM and Litigation dashboards	Tracking of litigations across of onboarded lawfirms across	CRM cases status, litigation process updates, deadlines (filterable by court, tax-office)

	all courts e.g., ATIR, SC, HC	
Data Integrations	Tracking of return filing and enforcement status for priority high value non-filing individuals	Notices status, notice deadlines, taxpayer filing status, null filing instances (filterable by tax-office, tax-officer)
Social Media Scraping	Access to major news channels / social media platforms and collection and analysis of data from various social media platforms	Social media trends and sentiments, digital campaign performance, traditional media coverage, trending keywords related to tax, enforcement, or public complaints. Volume of posts or mentions related to tax, Sentiment analysis of public commentary (positive, neutral, negative), Geo-tagged content showing location-specific buzz, Screenshots or flagged posts routed as alerts to enforcement teams

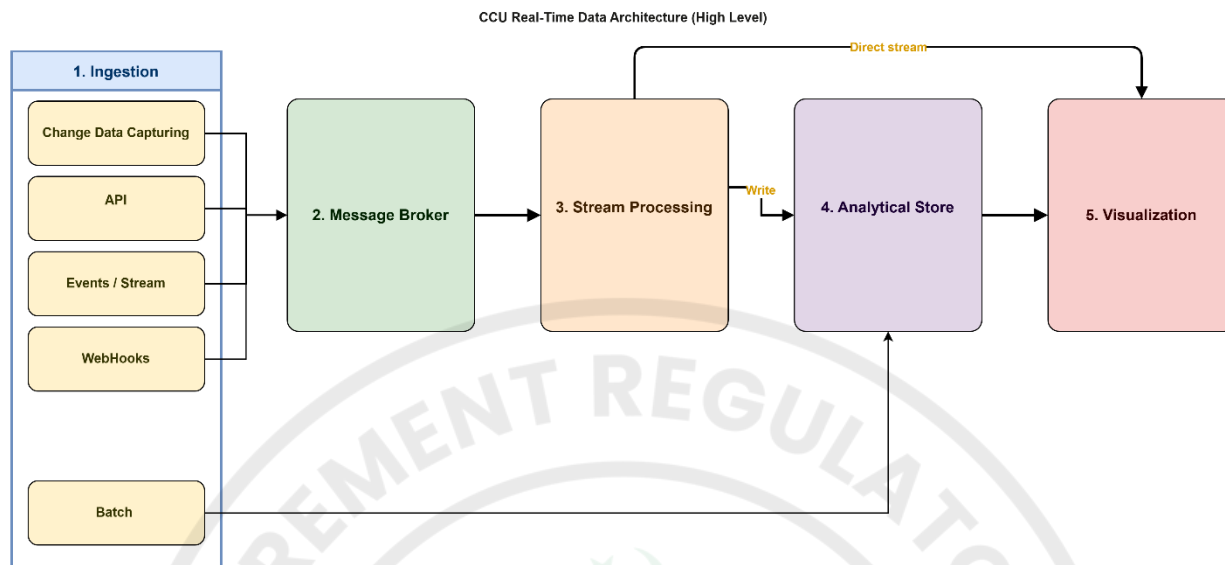
### **Future Integration Obligation**

The ingestion layer shall be designed with sufficient configurability and capacity to onboard new FBR digital interventions during the contract period without architectural changes or additional negotiations. The vendor shall be responsible for all integration engineering, pipeline development, schema mapping, dashboard development and testing.

## Reference Architecture

The CCU shall be built on a stream-first, event-driven real-time data architecture. Data shall flow unidirectionally from left to right across five tightly integrated layers: Ingestion, Message Broker, Stream Processing, Analytical Store, and Visualization. The architecture shall support sub-second data movement between layers and shall be deployed entirely on-premise with no dependency on external networks or cloud services. Vendors may propose minor variations to this architecture based on their enterprise technology stack, provided the logical separation of layers and the end-to-end latency requirements are preserved. Reference Architecture is provided below.

The Vendor must submit a detailed architectural framework that aligns with the CCU Real-Time Data Architecture, explicitly detailing the end-to-end data flow from Ingestion (including CDC, API, Stream, and Batch) through the Message Broker and Stream Processing layers. Documentation must demonstrate the interconnectedness of these systems, specifically detailing the Write path to the Analytical Store and the Stream path to Visualization. Furthermore, the Vendor must define the core functionality of each component and provide performance benchmarks specifically tailored to integration capacity, end-to-end response time, and visualization clarity.



**Layer 1: Ingestion** The ingestion layer shall serve as the unified entry point for all data originating from FBR's digital systems and field interventions. It shall support multiple ingestion modalities concurrently, including Change Data Capture (CDC) from transactional databases, REST and streaming APIs, real-time event and stream feeds from production tracking cameras and scanners, webhook-based push notifications from external FBR systems, and scheduled or trigger-based batch transfers. All ingestion connectors shall be capable of operating without an active internet connection, relying solely on the on-premise network fabric.

**Layer 2: Message Broker** The message broker shall act as the central nervous system of the architecture, decoupling data producers from consumers and ensuring reliable, ordered, and durable delivery of all events. It shall provide persistent, distributed log-based messaging with configurable retention, topic partitioning, consumer group management, and guaranteed at-least-once or exactly-once delivery semantics. The broker shall be capable of sustaining high-throughput ingestion from all upstream sources simultaneously without data loss or backpressure failures.

**Layer 3: Stream Processing** The stream processing engine shall consume event streams from the message broker in real time and apply stateful and stateless

transformations, enrichments, aggregations, filtering, and business rule evaluations. It shall support windowed computations, joins across multiple streams, and anomaly or threshold-based alert generation. Processed and enriched output shall be written directly to the Analytical Store, and where applicable, critical alerts shall be routed back through the broker or delivered directly to the visualization and notification layer.

**Layer 4: Analytical Store** The analytical store shall serve as the high-performance, columnar or hybrid storage layer purpose-built for real-time and historical analytical queries. It shall ingest high-frequency writes from the stream processing engine without degradation in query performance, and shall support concurrent low-latency reads by the visualization layer. The store shall maintain both real-time working datasets and historical time-series data, enabling operational dashboards and retrospective analysis from a single unified store.

**Layer 5: Visualization** The visualization layer shall provide interactive, role-based dashboards and operational views consumed directly from the analytical store. It shall support real-time data refresh, drill-down capabilities, KPI monitoring, threshold-based visual alerts, and configurable reporting. Access shall be governed through role-based access control, and all dashboard data shall remain within the on-premise boundary with no outbound data transmission.

### **Data Flow Summary**

Raw events and records originate at the Ingestion layer through CDC, APIs, webhooks, event streams, and batch feeds. These are forwarded to the Message Broker, which buffers, partitions, and durably stores all events for consumption. The Stream Processing engine subscribes to broker topics, applies real-time transformations and business logic, and writes enriched results to the Analytical Store. The Visualization layer queries the Analytical Store directly to render live dashboards, KPI panels, and alerts for FBR operational teams. A direct stream path from the Message Broker to the Analytical Store is also supported for high-volume raw data that does not require stream-side transformation before storage.

### **Architecture & Deployment Requirements**

#	Requirement	Specification
1	Deployment Model	The entire solution shall be deployed strictly on-premise at the FBR-designated CCU site. No component, service, or data pipeline shall have a dependency on cloud infrastructure.
2	Internet Connectivity	The solution shall be fully operational with no active internet connection. All components shall function entirely within the FBR internal network perimeter.
3	Data Security	The solution shall enforce encryption at rest and in transit across all layers. Role-based access control, audit logging, and data masking capabilities shall be mandatory.
4	Software Ecosystem	All software components shall be enterprise-grade with active commercial vendor support
5	End-to-End Latency	The solution shall guarantee end-to-end data processing and visualization refresh within 5 seconds from event origination at the ingestion layer under normal operational load.
6	License Inclusion	All operating systems and software licenses required to operate the complete solution shall be included in the vendor's commercial proposal. No component shall be left unlicensed or subject to separate procurement by FBR.
8	Full Solution Delivery	The vendor shall be responsible for the complete delivery, configuration, integration, and deployment of the solution on FBR-provisioned virtual machines. No partial or component-only delivery shall be accepted.

9	FBR Systems Integration	The vendor shall be required to integrate the CCU with existing and future FBR digital systems, including but not limited to production tracking cameras, scanners, digital invoicing systems, and other designated FBR data sources, as part of the implementation scope.
10	Implementation	Vendor is responsible to provide end to end implementation services including building Data Integration Pipelines, Streaming setup, Stream Processing engine development, Analytical Store Setup and Data modeling, Data Visualization through dashboard.



## Data Integration / Ingestion:

The Data Ingestion Layer shall serve as the primary interface between FBR's operational source systems and the CCU real-time data pipeline. This layer is responsible for the continuous, reliable, and low-latency capture of data changes and events from heterogeneous source systems, including relational databases, transactional applications, REST APIs, webhook publishers, event emitters, and batch data exports originating from existing and future FBR digital interventions.

The ingestion layer shall be built on an enterprise-grade Change Data Capture and data integration platform. This platform shall operate by intercepting database transaction logs at the source level, enabling non-intrusive, real-time extraction of insert, update, and delete operations without imposing query load on source systems. This log-based CDC mechanism shall eliminate the need for polling-based or trigger-based extraction patterns, ensuring minimal impact on source system performance while guaranteeing row-level change fidelity and ordering.

The platform shall support heterogeneous source connectivity, covering major relational database engines, mainframe systems, and file-based sources through a unified, configuration-driven integration framework. All captured change events shall be serialized into a structured, schema-aware format and forwarded to the Message Broker layer for downstream consumption by the stream processing engine. The ingestion platform shall provide a centralized management interface for pipeline monitoring, throughput visibility, lag tracking, and error handling, enabling FBR operations teams to maintain full observability over all active ingestion pipelines.

The vendor shall be responsible for the full implementation of this layer, including source system connectivity, schema mapping, initial load execution, ongoing incremental CDC, and integration hardening across all designated FBR data sources.

## Implementation

The vendor shall install and configure the enterprise data integration platform on FBR-provisioned virtual machines. Implementation shall include the following activities that cover all source systems that are part of this project:

- Source system profiling and connectivity validation for all designated FBR systems
- Configuration of log-based CDC pipelines for all relational and transactional sources
- Schema mapping, data type normalization, and transformation rule definition
- Execution and validation of full initial loads prior to incremental CDC activation
- Configuration of API-based, webhook-based, and event stream ingestion connectors
- Integration with the Message Broker layer for downstream event delivery
- End-to-end pipelines testing, latency benchmarking, and throughput validation
- Handover documentation and knowledge transfer to FBR and PRAL technical teams

This would be a full implementation with concrete results displayed in the form of Dashboards at CCU.

#	Requirement	Specification
1	Log-Based Change Data Capture	The ingestion platform shall implement log-based CDC by reading directly from database transaction logs, redo logs, or equivalent native log mechanisms at the source. Trigger-based or polling-based extraction methods shall not be accepted as the primary CDC mechanism.

2	Heterogeneous Source Support	The platform shall natively support connectivity to a minimum of five enterprise relational database engines, including Oracle, Microsoft SQL Server, PostgreSQL, MySQL, and Teradata, without requiring custom or third-party middleware for each connection.
3	Initial Load and Incremental Sync	The platform shall support full initial load of historical data from source systems followed by seamless, automated transition to real-time incremental CDC, with no manual intervention or pipeline restart required at the point of cutover.
4	Exactly-Once and At-Least-Once Delivery	The platform shall support configurable delivery semantics, providing exactly-once or at-least-once event delivery guarantees to the message broker, with built-in deduplication and offset management to prevent data loss or duplication under failure conditions.
5	Schema Evolution Handling	The platform shall automatically detect and alert on source schema changes, including column additions, data type modifications, and table renames
6	Multi-Source Concurrency	The platform shall support concurrent ingestion from a minimum of twenty active source pipelines simultaneously, with independent throughput, latency, and error management per pipeline, and without resource contention between pipelines.
7	Message Broker Native Integration	The platform shall natively publish captured change events to the enterprise message broker layer using the broker's native protocol, without requiring intermediate file drops, JDBC bridges, or custom-coded producers. Event delivery shall preserve source ordering guarantees.

8	Centralized Monitoring and Alerting	The platform shall provide a unified management and monitoring interface exposing per-pipeline metrics including throughput, replication lag, event counts, error rates, and last successful event timestamp. Threshold-based alerting shall be configurable for all key metrics.
9	Enterprise Licensing and Support	The platform shall be procured under a commercial enterprise license that includes 24/7 vendor technical support, access to software updates and patches, and a documented SLA for critical issue resolution. Open-source distributions without a formal support agreement shall not be accepted.
10	Security and Access Control	All data in transit from source systems to the message broker shall be encrypted using TLS 1.2 or higher. The platform shall enforce role-based access control for pipeline configuration and management operations, and shall maintain a tamper-evident audit log of all administrative actions.
11	API-Based Ingestion	The platform shall support ingestion of data from source systems and third-party FBR applications through REST and SOAP APIs. The platform shall handle authentication, pagination, rate limiting, and retry logic natively, and shall deliver API-sourced payloads to the message broker in a structured, schema-consistent format.
12	Webhook-Based Ingestion	The platform shall expose configurable webhook endpoints capable of receiving push-based event notifications from FBR source systems in real time. Received webhook payloads shall be parsed, validated, and forwarded to the message broker without buffering

		delays, ensuring alignment with the overall end-to-end latency requirement.
<b>13</b>	Batch Ingestion	The platform shall support scheduled and trigger-based batch ingestion from file-based sources, relational exports, and legacy FBR systems that do not support real-time integration patterns. Batch jobs shall be configurable in terms of frequency, partitioning, and error handling, and shall deliver data to the message broker or analytical store as structured, ordered event sets.
<b>14</b>	Event and Stream Ingestion	The platform shall natively consume real-time event streams from field devices, production tracking systems, scanners, and cameras deployed under FBR digital interventions. It shall support standard event streaming protocols.

### Message Broker & Streams Processing

A message broker is a middleware component that acts as an intermediary between different applications or services, enabling them to communicate asynchronously without being directly connected to one another. At its core, a message broker receives messages from producers (the senders) and routes them to the appropriate consumers (the receivers), decoupling the two sides so they don't need to know about each other's existence. This decoupling allows systems to scale independently, tolerate failures gracefully, and evolve without tight dependencies. Brokers typically organize messages into topics or queues, where producers publish data and consumers subscribe to receive it a pattern commonly known as pub/sub (publish-subscribe). By acting as a buffer, the broker also handles situations where consumers are temporarily unavailable, storing messages durably until they can be processed.

At FBR beyond simple message passing, a high-performance message broker serves as the backbone for event streaming and real-time data pipelines. It can handle

millions of messages per second across distributed nodes, making it ideal for use cases like log aggregation, activity tracking, transaction processing, and microservices coordination. Advanced brokers offer features like message replay — allowing consumers to rewind and re-read historical messages — as well as configurable retention policies, partitioning for parallelism, and consumer group management to distribute workload across multiple instances. This makes them not just a communication tool, but a powerful platform for building fault-tolerant, event-driven architectures that can serve as the central nervous system of a modern distributed system.

### **Implementation**

The vendor shall be responsible for the complete implementation of the Message Broker layer, covering the following activities:

1. Provisioning and deployment of broker nodes (on-premise) and installation and configuration of the cluster management layer. This will include network topology setup including listeners, advertised hosts, and inter-broker communication.
2. Security hardening — SSL/TLS encryption, SASL authentication, and ACL-based authorization.
3. Defining replication factors and partition strategies per topic to ensure fault tolerance and parallelism. Tuning broker-level settings such as log retention policies, segment sizes, and flush intervals
4. Configuring producer and consumer performance parameters (batch size, compression, acknowledgment levels). Setting up quotas and throttling to prevent any single client from overwhelming the cluster. Designing topic naming conventions and governance standards
5. Defining partition counts aligned with expected throughput and consumer parallelism. Building producer services that publish events from source systems (databases, applications, APIs). Developing consumer groups and processing logic to read, transform, and route messages to target systems

6. Implementing stream processing pipelines for real-time transformations, aggregations, and enrichments using a compatible stream processing framework
7. Setting up connectors for seamless integration with databases, data warehouses, and third-party tools via a connector framework
8. Deploying monitoring dashboards to track broker health, consumer lag, throughput, and latency.

#	Requirement	Specification
1	High Throughput	Must handle millions of messages per second to support high-volume, real-time data workloads without bottlenecking producers or consumers.
2	Fault Tolerance	The system must continue operating without data loss in the event of broker node failures through replication and automatic leader election
3	Scalability	Must support horizontal scaling of brokers, producers, and consumers dynamically to accommodate growing data volumes without downtime
4	Durability	Messages must be persisted to disk and replicated across multiple nodes to guarantee no data is lost even under failure conditions
5	Low Latency	End-to-end message delivery must operate in near real-time (milliseconds range) to support time-sensitive applications and event-driven architectures
6	Message Ordering	Must guarantee ordered delivery of messages within a partition or queue to preserve event sequencing for downstream consumers
7	Security	Must enforce encryption in transit (TLS), encryption at rest (AES-256), authentication (SASL/OAuth/mTLS), and authorization (RBAC/ACLs)

<b>8</b>	Replay & Retention	Must support configurable message retention policies and allow consumers to rewind and re-consume historical messages from any point in time
<b>9</b>	Observability	Must provide built-in or integrable monitoring for broker health, consumer lag, throughput, latency, and alerting for operational anomalies
<b>10</b>	Data Streams Processing	Must have the capability to do data transformation, filtration and aggregations to store results to various data sinks.

### Analytical Store

The Analytical Store shall serve as the high-performance, columnar storage and query engine at the core of the CCU's real-time analytics capability. It shall receive enriched, processed event streams directly from the Stream Processing Engine and persist them in a format optimized for sub-second analytical query execution. The store shall function as the single source of truth for all operational dashboards, KPI panels, drill-down investigations, and alert-driven analytical views consumed by FBR teams in CCU. It shall be capable of sustaining continuous high-frequency writes from the stream processing layer while simultaneously serving concurrent low-latency read queries from the visualization layer, without performance degradation under combined workload conditions.

The Analytical Store shall maintain a rolling short-term historical dataset spanning a minimum of three to six months of operational data across all ingested FBR data domains. This retention window shall support both real-time monitoring and retrospective operational analysis from a single unified store, eliminating the need for separate hot and cold storage tiers within the CCU boundary. The store shall be deployed entirely on-premise on FBR-provisioned virtual machines, with no external data egress at any point. The vendor shall be responsible for end-to-end data modeling, schema design, partitioning strategy, and query optimization as part of the implementation scope.

### Implementation

The vendor shall be responsible for the complete implementation of the Analytical Store layer, covering the following activities:

1. Installation and configuration of the enterprise analytical database engine on FBR-provisioned virtual machines, including cluster setup, storage allocation, and network binding within the on-premise environment.
2. End-to-end dimensional and analytical data modeling, including the design of fact tables, dimension tables, materialized aggregations, and time-series schemas aligned to each FBR operational data domain.
3. Definition and implementation of partitioning strategies based on time-based and domain-based keys to ensure query isolation, parallel execution, and efficient data pruning across the retention window.
4. Configuration of ingestion interfaces from the Stream Processing Engine, including native connectors, write protocols, schema registration, and throughput tuning to sustain continuous high-frequency event writes.
5. Implementation of materialized views and pre-aggregated summary tables to support dashboard query patterns with guaranteed sub-second response times under concurrent user load.
6. Definition and enforcement of data retention policies governing the rolling three-to-six-month short-term historical window, including automated data expiry, partition pruning, and storage reclamation procedures.
7. Query performance benchmarking and tuning across all defined dashboard and drill-down query patterns, with documented baseline response times validated against the specified latency thresholds prior to go-live.
8. Role-based access control configuration, including schema-level and table-level permission assignment aligned to FBR operational roles and data sensitivity classifications.
9. Integration testing with the visualization layer to validate end-to-end query execution, dashboard refresh rates, and concurrent user load handling under simulated operational conditions.

10. Delivery of complete technical documentation covering the data model, schema registry, partitioning design, retention configuration, and query optimization guide, with formal knowledge transfer to FBR technical teams.

#	Requirement	Specification
1	Columnar Storage Architecture	The analytical store shall implement a columnar storage format natively optimized for aggregation, filtering, and scan-heavy analytical query patterns.
2	Real-Time Write Ingestion	The store shall support continuous, high-throughput ingestion of event records from the stream processing engine with write latency not exceeding one second under normal operational load. Write operations shall not degrade concurrent read query performance beyond a measurable threshold.
3	Sub-Second Query Response	The store shall deliver analytical query responses within one second for standard dashboard queries and within five seconds for complex drill-down queries executed against the full three-to-six-month retention dataset, under a minimum of twenty concurrent user sessions.
4	Short-Term Historical Retention	The store shall maintain a configurable rolling retention window of a minimum of three months and a maximum of six months of operational data across all FBR data domains, with automated partition expiry and storage reclamation upon retention boundary breach.
5	Materialized Views and Pre-Aggregation	The store shall support the definition and automated refresh of materialized views and pre-aggregated summary tables to accelerate recurring dashboard query patterns. Refresh cycles shall be configurable and shall not block or delay incoming write streams.

<b>6</b>	Concurrent Read and Write Isolation	The store shall support fully concurrent read and write operations without locking, blocking, or serialization conflicts. Query execution shall not be queued or delayed due to simultaneous high-frequency write ingestion from the stream processing engine.
<b>7</b>	Partitioning and Data Pruning	The store shall support time-based and domain-based partitioning with automatic partition pruning during query execution, ensuring that query scans are limited to relevant data segments and do not perform full dataset scans for time-bounded analytical queries.
<b>8</b>	Visualization Layer Integration	The store shall expose a standard SQL-compatible query interface and shall provide native connectors or certified JDBC/ODBC drivers for integration with the enterprise visualization layer. All query traffic from the visualization layer shall be served directly from the on-premise store with no intermediate caching tier required.
<b>9</b>	Role-Based Access Control	The store shall enforce role-based access control at the schema, table, and column level, restricting data visibility based on FBR-defined operational roles. All access attempts, including failed authentications and unauthorized query attempts, shall be recorded in a tamper-evident audit log.
<b>10</b>	Enterprise Licensing and Support	The analytical store shall be procured under a commercial enterprise license inclusive of 24/7 vendor technical support, guaranteed software patch and update access, and a documented SLA for critical incident resolution.

## Real-Time Dashboard & Visualization

The proposed solution shall establish a centralized, on-premise Real-Time Dashboard and Visualization Layer comprising Operational, Strategic, and Analytical dashboards to support comprehensive monitoring, compliance tracking, and executive decision-making across FBR domains. The visualization layer shall provide interactive, role-based dashboards directly powered by the Analytical and Real-Time Serving Layer, enabling real-time data refresh, KPI monitoring, drill-down investigation, and threshold-based alerting.

The platform shall support data consumption across multiple time horizons, ranging from real-time and real-time operational data to aggregated and historical datasets (including yearly views), depending on defined business use cases.

The solution shall enable a unified Command & Control Unit (CCU) capability, delivering live operational visibility, structured analytical alert management, and enforcement-driven insights. All visualization, reporting, and data access capabilities shall operate strictly within the on-premise environment.

The platform shall support multiple user personas, including executive leadership, operational teams, enforcement units, and analysts, through secure, governed, and scalable access mechanisms. The solution shall also provide robust support for configurable alerts and threshold-based monitoring.

The platform shall support secure mobile access, enabling authorized users to access dashboards, alerts, and KPIs via mobile devices with responsive design and role-based access controls.

The Vendor shall assess the existing platforms currently in use by PRAL and FBR, including Tableau v2026 and Oracle Analytics Server v2023, to determine their capability to meet the required real-time and analytics requirements. Where limitations are identified, the Vendor shall propose suitable alternative or complementary technologies, along with clear technical justification, integration approach, and impact assessment.

## Implementation Requirements

1. The Vendor shall implement an on-premise visualization environment capable of consuming data directly from the analytical store or Real-Time Serving Layer, with real-time refresh capabilities and optimized performance for concurrent users and command center displays.
2. The Vendor shall develop visualization as per requirements across real-time, analytical, aggregated, and detailed data layers based on defined business use cases.
3. Implementation should support high-frequency data refresh and efficient query performance to ensure a seamless user experience across operational dashboards, executive views, and command center displays.
4. The deployed dashboards and visualizations by vendor shall adhere to industry-standard UX/UI best practices, ensuring intuitive navigation and usability.
5. The dashboards should be designed that they are accessible via secure web and mobile interfaces and optimized for both operator workstations and large command center video wall displays.
6. The vendor shall implement rule-based, threshold-driven alerting across all data feeds and operational interventions and also provide full alert lifecycle management including creation, acknowledgment, assignment, escalation, and closure with audit trails.
7. The vendor shall implement multi-level drill-down capabilities from summary dashboards to detailed transactional data.
8. The developed dashboards shall support investigation workflows including filtering, slicing, drilling, and cross-domain
9. The implementation shall enforce role-based access control (RBAC) across dashboards, reports, and data views.
10. The implemented solution shall support scheduled and on-demand report generation.

11.The implemented platform shall enable export of dashboards and reports in standard formats including PDF and Excel, with email subscriptions.

### Detailed Requirements Table

	<b>Requirement</b>	<b>Specification</b>
<b>1</b>	On-Premise Deployment	The solution shall be fully deployed on-premise
<b>2</b>	Multi-Layer Visualization	multi-layer visualization capabilities, including real-time, aggregated, and detailed dashboards, based on defined business and analytical use cases.
<b>3</b>	Query Performance	low-latency query performance, with response times in seconds
<b>4</b>	High Availability	Minimum 99.99% uptime.
<b>5</b>	24/7 Availability	Continuous availability across all interfaces.
<b>6</b>	Cross-Platform Access	Support web and mobile access across modern platforms.
<b>7</b>	Mobile Support	Secure, responsive mobile dashboards.
<b>8</b>	UX/UI Standards	Industry-standard UX/UI with intuitive navigation.
<b>9</b>	Rendering Performance	Seamless dashboard rendering with minimal lag.
<b>10</b>	Role-Based Dashboards	Support multiple user roles and dashboard segmentation.
<b>11</b>	Command Center Optimization	Optimized for video walls and operator terminals.
<b>12</b>	Alerting	Rule-based, threshold-driven alerts.
<b>13</b>	Alert Lifecycle	Full lifecycle management with audit tracking.
<b>14</b>	Alert Prioritization	Severity levels and confidence scoring.
<b>15</b>	Notifications	Multi-channel alerts (dashboard, email).
<b>16</b>	Drill-Down	Multi-level drill-down to transaction level.
<b>17</b>	Investigation	Cross-domain analysis
<b>18</b>	Advanced Visuals	Advanced visualization capabilities, including but not limited to heatmaps, trend analysis, Sankey diagrams, geospatial maps, combo charts, and other interactive visual formats.

<b>19</b>	RBAC	Role-based access at dashboard and data level.
<b>20</b>	Audit Logs	Tamper-evident logging of all activities.
<b>21</b>	Data Security	Strict on-premise data control.
<b>22</b>	Distribution	Automated report distribution.
<b>23</b>	Scalability	High concurrency support.
<b>24</b>	Unified Dashboards	Support both real-time and aggregated dashboards.
<b>25</b>	Enterprise Support	enterprise-grade support with 24/7 availability, backed by defined SLAs for incident response and resolution. Support shall be provided by the OEM or an authorized partner, including access to patches, upgrades, and technical assistance.
<b>26</b>	Pixel-Perfect Rendering	The platform shall ensure pixel-perfect dashboard rendering with no blur, distortion, pixelation, or misalignment across all supported devices and display resolutions.
<b>27</b>	High Resolution	4K and higher, without pixelation, blur, or visual distortion.
<b>28</b>	Zoom & Scaling	The platform shall support smooth zoom-in and zoom-out functionality while preserving layout integrity, alignment, and readability of all dashboard elements.
<b>29</b>	Multi-Screen Support	The platform shall support seamless single and multi-screen (video wall) dashboard display without distortion or misalignment.
<b>30</b>	Adaptive Layout	The dashboards shall dynamically adapt to different screen sizes, resolutions, and aspect ratios, ensuring consistent usability, layout structure, and visual clarity across devices.
<b>31</b>	High Availability (HA)	High availability architecture to ensure continuous operation with a minimum uptime of 99.99%, including failover, redundancy, and no single point of failure.

## Alerting and Notification

The Alerting and Notification Engine shall continuously evaluate processed event streams and analytical store data against predefined thresholds, business rules, and anomaly conditions, generating and routing structured alerts to designated FBR operational roles without manual intervention. All rules, thresholds, and

notification workflows shall be configurable by authorized FBR personnel without vendor involvement or code-level changes. The vendor shall implement the engine end-to-end, covering: alert rule design and threshold configuration across all integrated digital interventions; integration with the Stream Processing layer for real-time evaluation and with the Analytical Store for retrospective and scheduled checks; configuration of role-based notification routing across all delivery channels.

#	Requirement	Specification
1	Detection Latency	Alert conditions shall be evaluated against live event streams with detection-to-alert latency not exceeding two (5) seconds under normal operational load.
2	Rule Logic	Alert rules shall support multi-condition logic using AND, OR, and NOT operators across streams and domains, plus scheduled and trigger-based evaluation against the Analytical Store for retrospective and trend-based conditions.
3	Severity and Escalation	A minimum of three severity tiers (Critical, Warning, Informational) shall be supported, each with independently configurable notification channels, escalation timelines, and automatic escalation across a minimum of three levels upon acknowledgment timeout.
4	Notification Channels	Notifications shall be delivered via on-screen dashboard, email, and SMS, configurable per rule and per severity tier, with suppression windows available for planned maintenance without permanently disabling any rule.
5	Self-Service Management	Authorized FBR personnel shall create, modify, clone, suppress, and retire alert rules without vendor involvement, code changes, or system restarts.
6	CCU Action Track	The CCU shall track alert lifecycle status (acknowledged, assigned, closed) and operational outcomes recorded by

		FBR officers, enabling basic effectiveness reporting of CCU-driven actions.
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## SECURITY AND ACCESS CONTROL

All components across the five-layer CCU architecture shall conform to a unified security framework enforced at every layer boundary.

#	Requirement	Specification
1	Encryption	TLS 1.2 or higher in transit. AES-256 at rest across all layers.
2	Authentication	SASL, OAuth 2.0, or mTLS enforced on all components. Anonymous access shall not be permitted.
3	Access Control	RBAC enforced at platform, schema, table, and dashboard levels per FBR-defined roles. Least-privilege mandatory. No shared or default credentials in production.
4	Audit Logging	Centralized, tamper-evident audit log covering all access, pipeline, and administrative events across all layers, retained for the full Analytical Store retention window.
5	Data Masking	Sensitive fields including taxpayer identifiers and financial values shall be masked in dashboard and query outputs based on role entitlements.
6	Network Isolation	All components shall operate exclusively within the FBR on-premise perimeter. No outbound connection to external networks or cloud services shall be permitted.

## Human Resources and CCU Operations Team

The vendor shall provide fully staffed, 24/7 CCU operations across three rotational shifts for the entire contract duration, ensuring continuous availability of dashboards, alerts, communication tools, and operational monitoring capabilities.

## CCU Operations Team

The vendor shall deploy and maintain the following minimum staffing at the CCU site:

Role	Headcount	Responsibilities
<b>CCU Manager / Team Lead</b>	1	Overall accountability for CCU operations, shift coordination, SOP compliance, incident escalation and closure, SLA adherence, and coordination with FBR, PRAL, and intervention owners
<b>Systems Infrastructure Engineer</b>	1	CCU infrastructure availability, performance, security, patching, access controls, and backups of CCU operational data and configurations
<b>DevOps / Platform Engineer</b>	2	Deployment, configuration, automation, upgrades, and reliability of CCU application and integration services including CI/CD and environment management
<b>Integration Engineer</b>	2	Onboarding and maintaining integrations with digital interventions, managing APIs and connectors, monitoring data flows, and performing first-level diagnostics for integration issues
<b>Application / CCU Software Engineer</b>	2	CCU dashboards, alerting workflows, reporting views, and application enhancements per approved change management processes
<b>Real-Time Monitoring</b>	2 to 4	Continuous monitoring of dashboards and alerts, ticket handling, escalation per SOPs

<b>Operators (Day Shift)</b>		and SLAs, incident logging, and shift handovers
<b>Real-Time Monitoring Operators (Night Shift)</b>	1 to 2	Same as day shift with minimum coverage for continuous operations
<b>Reporting / Operations Support Analyst</b>	Shift-based	Operational reports, summaries, and support to FBR embedded teams

### Coverage and Qualifications

- The Vendor shall ensure **24/7 CCU operations** through a shift-based staffing model.
- All key staff shall possess relevant qualifications and experience.
- CVs and role mappings for key personnel shall be submitted with the bid, and FBR shall be notified of any changes during the contract period.

The staffing numbers provided are minimum and indicative and shall be supported by adequate engineering and platform roles to ensure continuous integration, enhancement, and operational stability.

### Service Specifications

#### 1. Training & Support

- **CCU Solution Training (Functional & Operational):**  
The Vendor shall provide end-to-end training on the CCU solution, covering system workflows, operational concepts, alert lifecycle management, dashboard navigation, escalation mechanisms, and day-to-day coordination processes to ensure effective utilization of the CCU as an operational command environment.
- **User Training:**  
The Vendor shall deliver structured user training sessions, including user

manuals/run books, SOPs, and system walkthroughs, to enable FBR personnel to effectively operate the CCU for operational monitoring, alert handling, dashboard usage, and coordination activities.

- **Technical** **Training:**  
The Vendor shall provide technical training for designated IT and technical teams covering CCU system administration, configuration management, monitoring, troubleshooting, security controls, backup and restore procedures for CCU operational components, and application updates.
- **Management** **Training:**  
The Vendor shall provide high-level orientation for FBR leadership and supervisory roles on CCU dashboards, alerts, reports, and performance monitoring, including interpretation of indicators, escalation workflows, and operational decision-support capabilities.

## 2. Technical Support & Maintenance

- **User** **Helpdesk:**  
Provision of 24/7 user support via phone, email, or ticketing system for operational issues related to CCU dashboards, alerts, displays, and system access.
- **Technical** **Assistance:**  
The Vendor shall ensure the availability of qualified technical personnel to provide preventive and corrective maintenance, first-level diagnostics, and urgent technical resolution for CCU software, and integration components.
- **Post-Warranty** **Maintenance:**  
Provision of post-warranty support services for the duration specified in the contract, including software updates, security patches, performance tuning, and operational optimization of CCU components.
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## 3. Data Conversion & Migration

- Where required, the Vendor shall support one-time or limited migration of CCU operational configuration data, including dashboard definitions, alert rules, thresholds, user roles, and historical alert/event records relevant to CCU operations.
- Data validation and quality checks shall be performed to ensure accuracy and continuity of CCU operational views prior to go-live.

- Support for existing data structures and formats shall be limited to ensuring continued access to historical operational dashboards, alerts, and evidentiary records required for CCU monitoring and audit purposes.

## Documentation Requirements

### 1. End user documents:

#### i. **Types of End-User Documents:**

- User Manuals
- Quick Start Guides
- FAQs and Troubleshooting Guides
- Training Materials (e.g., slides, videos, interactive tutorials)

#### ii. **Language:**

- English

#### iii. **Content:**

- Detailed instructions on system usage, including login procedures, dashboard navigation, and report generation
- Step-by-step guides for common tasks and troubleshooting
- Visual aids such as screenshots, diagrams, and flowcharts
- Glossary of terms and definitions

#### iv. **Formats:**

- PDF documents for downloadable manuals and guides
- HTML for online help and knowledge base articles
- Video formats (MP4) for training tutorials

#### v. **Quality Control and Revision Management:**

- Regular reviews and updates to ensure accuracy and relevance
- Version control to track document revisions
- User feedback mechanisms to identify areas for improvement

#### vi. **Medium:**

- Digital formats available on the company's intranet
- Printed copies upon request

vii. **Reproduction and Distribution Methods:**

- Digital distribution via email, intranet, and company website
- Printed copies distributed through internal mail or upon request

**2. Technical documents:**

i. **Types of Technical Documents:**

- System Architecture Diagrams
- Integration Documentation
- Run books
- Installation and Configuration Guides
- Maintenance and Troubleshooting Manuals
- Technical Specifications and Data Sheets
- Security and Compliance Documentation

ii. **Language:**

- English

iii. **Content:**

- Detailed descriptions of system architecture and components
- API endpoints, request/response formats, and usage examples
- Step-by-step installation and configuration procedures
- Maintenance schedules, diagnostic procedures, and troubleshooting steps
- Technical specifications for software requirements
- Security protocols, data encryption methods, and compliance measures

iv. **Formats:**

- PDF documents for comprehensive guides and manuals
- HTML for online API documentation
- Diagrams in vector formats (e.g., SVG) and image formats (e.g., PNG)
- Spreadsheets (e.g., Excel) for technical specifications and data sheets

v. **Quality Control and Revision Management:**

- Peer reviews and technical validation to ensure accuracy and completeness
- Version control to manage document updates and revisions
- Adherence to technical writing standards
- Regular updates to reflect system changes and enhancements

vi. **Medium:**

- Digital formats available on the company's intranet and developer portal
- Printed copies for critical documents (e.g., installation guides) upon request

vii. **Reproduction and Distribution Methods:**

- Digital distribution via email, intranet, and developer portal
- Printed copies distributed through internal mail or upon request

## Testing and Quality Assurance Requirements

### Inspections

- i. The Vendor shall be responsible for the safe and sound delivery of all software products as per the Purchase Order, at FBR's designated locations as per Schedule within the timescales stated in the Purchase Order.
- ii. FBR or its authorized representatives shall have the right to inspect and test the Product being supplied and installed by the Vendors on or after delivery as per the Purchase Order.
- iii. Should any inspected or tested Products fail to conform to the specifications as required by FBR and as per the Purchase Order, FBR may reject them and the Vendor shall either replace the rejected Products or make alterations necessary to meet specification requirements of FBR at no cost to FBR.

### Pre-commissioning Tests

Prior to proceeding to full system acceptance, the Vendor shall conduct **Pre-Commissioning Tests** to validate the readiness of the Central Control Unit (CCU) for operational use. These tests shall confirm the correct installation, configuration, connectivity, and basic functional operation of the CCU as an **operational monitoring and coordination facility**.

All Pre-Commissioning Tests must be successfully completed and formally accepted by FBR before commencement of the User Acceptance Testing (UAT) phase.

### Scope of Pre-Commissioning Tests:

1. System Installation & Configuration Verification
  - Verify that all CCU software, and supporting items have been installed and configured in accordance with the approved design and specifications.
  - Confirm that CCU components (integration services, dashboards, alerting mechanisms, observability tools, and video wall interfaces) are operational and accessible.
  - Validate that data and indicators received from designated digital interventions and upstream systems are **structured, complete, and compatible** with CCU ingestion and monitoring requirements.
2. Connectivity & Data Flow Validation
  - Confirm end-to-end connectivity (Integration) between designated intervention environments, FBR/PRAL systems, and the CCU.
  - Validate that data and indicator flows from source systems to the CCU are functioning correctly through approved interfaces.
  - Verify that real-time and near-real-time feeds, as well as any configured periodic/batch transmissions, are received and processed correctly for monitoring purposes.
3. Initial Dashboard & API Functionality Check
  - Verify that CCU dashboards render correctly and display expected operational indicators and monitoring views.
  - Validate that alert generation, notification mechanisms, and alert lifecycle workflows (creation, acknowledgement, escalation, closure) are functional.
  - Confirm that APIs and integration endpoints used for CCU ingestion and data exchange are operational and responding as expected.

#### 4. Security & Access Control Testing

- Validate implementation of role-based access control (RBAC) for CCU users, including operators, administrators, and supervisory roles.
- Verify secure authentication mechanisms, encryption of data in transit and at rest (where applicable), and audit logging of user access and system activities.
- Confirm that access to CCU systems and displays complies with FBR security and governance requirements.
- 

**Criteria for Completion:** Successful completion of Pre-Commissioning Tests shall be confirmed through formal certification by FBR, verifying that:

- CCU software components are correctly installed and configured;
- Connectivity and data/indicator transmission to the CCU are reliable and stable;
- Dashboards, alerts, and monitoring functions operate as intended; and
- Security and access controls are correctly enforced.

Upon certification, the CCU shall be deemed ready to proceed to the User Acceptance Testing (UAT) phase.

#### **Operational Acceptance Tests**

After successful completion of Pre-Commissioning Tests, the system shall undergo User Acceptance Testing (UAT), where senior FBR officers, analysts, and relevant stakeholders will validate the system's performance in real-world operational conditions.

#### **Scope of UAT:**

1. Functional Testing of Key Features
  - Verify real-time production monitoring across integrated industries
  - Confirm that anomaly detection alerts are correctly triggered based on defined thresholds.
  - Test compliance scoring and enforcement dashboards.
2. Performance & Load Testing

- Validate system performance under normal and peak data loads.
- Ensure the backend and frontend can handle simultaneous user access.
- 3. Compliance & Enforcement Mechanism Testing
  - Test reporting of flagged factories for non-compliance.
  - Verify real-time alerts and historical audit logs for inspection teams.
- 4. End-User Feedback & Issue Resolution
  - Conduct training sessions for FBR teams to interact with the system.
  - Identify and resolve user-reported issues before final acceptance.
- 5. Penetration and vulnerability testing of the system
  - Ensure data is encrypted during transmission and protected against tempering and manipulation

Criteria for Completion: FBR approval after all tests are successfully passed, ensuring full operational readiness.

## Project Plan

The Project Plan submitted by the Supplier shall comprehensively (but not limited to) address the following subjects:

### 1. Project Organization and Management Plan

- Define roles, responsibilities, and the governance structure for effective project execution.
- Include escalation pathways and points of contact for smooth communication and issue resolution.
- Establish a project management office (PMO) to oversee project execution.
- Detail the project management methodologies and tools to be used.

### 2. Training Plan

- Provide comprehensive training modules for FBR's staff covering system development/enhancement, integrations, operation, data analysis, and troubleshooting.
- Include follow-up refresher sessions, if applicable.
- Offer hands-on training sessions and user manuals.

- Develop a feedback mechanism to continuously improve training content.

### **3. Pre-commissioning and Operational Acceptance Testing Plan**

- Provide testing protocols to validate system functionality, integration, and compliance with performance benchmarks prior to commissioning.
- Include criteria for Operational Acceptance.
- Establish a testing schedule and resource allocation.
- Document test results and corrective actions taken.

### **4. Disaster Recovery Plan**

- Define roles and responsibilities of the Disaster Recovery Team (i.e., Primary contact, Response team, post-mortem analysis, Operations restoration).
- Provide disaster recovery procedures (i.e., Disaster Recovery calling tree, Activation criteria for activating the plan).
- Provide step-by-step procedures for restoring operations.
- Detail regular backups verification and steps for restoring data from backup.
- Include a business continuity plan to ensure minimal disruption.
- Details of requirements of Disaster Recovery Plan are also given in Business Function and Performance Requirement of this RFP.

### **5. Warranty Service Plan**

- Provide details of warranty coverage, including response times, replacement policies, and periodic maintenance schedules.
- Ensure alignment with the warranty requirements
- Include provisions for software updates and patches.
- Outline customer support channels and escalation procedures.

### **6. Task, Time, and Resource Schedules**

- Provide a Gantt chart or similar representation of key tasks, milestones, and associated timelines.
- Provide resource allocation details (e.g., personnel, equipment).
- Identify critical path activities and potential bottlenecks.
- Include contingency plans for resource reallocation.

## **7. Post-Warranty Service Plan (if applicable)**

- Outline post-warranty service provisions, including options for extending support agreements.
- Provide details on service-level agreements (SLAs) and support tiers.
- Offer service contracts and regular health checks.
- Include options for system upgrades and enhancements.

## **8. Technical Support Plan**

- Provide details of 24/7 support, escalation matrix, and service-level agreements (SLAs).
- Ensure availability of spare parts and maintenance procedures.
- Develop a knowledge base and self-service portal for common issues.
- Include remote support capabilities and on-site visit schedules.

## **9. CCU System Development**

- Provide a detailed customization plan for the CCU system to meet the specific needs of FBR.
- Include integration with existing systems, data security protocols, and scalability provisions.
- Outline the development process, including requirements gathering, design, implementation, and testing phases.

## **10. Compliance and Certification Plan**

- Ensure adherence to relevant regulatory and security standards (e.g., PTA-approved equipment, evaluation certifications).
- Provide documentation and timelines for obtaining all necessary certifications.
- Conduct regular audits and compliance checks.
- Include a plan for ongoing compliance monitoring and reporting.

## **11. Reporting and Monitoring Plan**

- Provide a mechanism for regular progress updates to FBR.
- Include provisions for dashboards or analytics reports to monitor system performance.
- Establish key performance indicators (KPIs) and metrics for success.
- Develop a reporting schedule and stakeholder communication plan.

## **12. Risk Management Plan**

- Identify potential risks and mitigation strategies.
- Develop a risk register to monitor and manage risks.
- Assign risk ownership and establish a risk review process.
- Include contingency plans for high-impact risks.

## **13. Change Management Plan**

- Outline the process for managing changes to the project scope, schedule, and resources.
- Develop a change request and approval procedure.
- Communicate changes to all stakeholders and update project documentation.
- Include training and support for users to adapt to changes.

## **14. Quality Assurance Plan**

- Define quality standards and acceptance criteria for project deliverables.
- Implement regular quality checks and audits.
- Develop a process for continuous improvement and feedback.
- Document quality assurance activities and results.

### **Implementation Timelines and Milestones**

Vendor would be required to complete the phases within the specified timeframes from the contract signing date (or any other reasonable plan agreed upon between FBR and Vendor):

#### **Phase 1: Architecture and Software Setup (4 weeks)**

Design Phase (4) Weeks: Design the full architecture along with Data Model.

Software Setup (4) Weeks: Software Setup including configurations, integration testing and smoke tests.

The Above two Items should run in Parallel

#### **Phase 2: Pre-Commissioning & Testing (12 weeks)**

Build phase (8 weeks): System calibration, End to End Development including data ingestion, processing, and Dashboard development. Verification, and preliminary functionality testing.

User Acceptance Testing (UAT) (4 weeks) - all stakeholders participate and sign off.

### **Phase 3: Full Operationalization & Go-Live (4 weeks)**

Go-live (4 weeks) - Full-scale CCU operations, enforcement dashboards active, and real-time data analytics enabled.

#### **DISASTER RECOVERY AND BACKUP**

The Vendor shall submit and maintain a comprehensive Disaster Recovery and Business Continuity Plan (DR/BCP) for the CCU ecosystem. This plan must encompass all architectural layers including Ingestion, Message Broker, Stream Processing, Analytical Store, and Visualization as well as supporting functions such as alerting, observability, and operational logs.

Requirements include:

- **Automated Backups & Restoration:** Implementation of regular, automated backup cycles with documented restoration procedures and mandatory periodic DR drills.
- **Recovery Point Objective (RPO):** The Vendor must guarantee an RPO of 15 minutes, ensuring minimal data loss across the stream processing and analytical store layers.
- **Recovery Time Objective (RTO):** The Vendor must guarantee an RTO of 4 Hours for the restoration of core visualization and real-time alerting capabilities.
- **Component-Specific Recovery:** The plan must specifically detail the failover mechanisms for each component in the Ecosystem

### Availability, Reliability, and Fault Tolerance section

The vendor shall ensure the CCU operates as a continuously available, fault-tolerant system meeting the following requirements:

#	Requirement	Specification
1	System Uptime	The solution shall maintain continuous 24/7 availability with 99.9 % uptime in accordance with agreed SLAs.
2	Fault Tolerance	The system shall continue operating without data loss in the event of component failures through replication, redundancy, and automatic failover mechanisms.
3	No Single Point of Failure	The proposed architecture shall have no single point of failure across any layer including the message broker, stream processing engine, analytical store, and visualization layer.
4	High Availability	All critical components shall be deployed in a highly available configuration with active-active or active-passive redundancy as appropriate.
5	Data Durability	All data in transit and at rest shall be replicated across multiple nodes ensuring no data loss under failure conditions.
6	Recovery Objectives	The vendor shall define and comply with documented RTOs and RPOs aligned to FBR's operational continuity requirements.
7	Performance Under Load	The system shall sustain full operational performance under normal and peak load conditions without degradation in latency, throughput, or dashboard refresh rates.

## BOQs guideline for Vendors

The Vendor shall submit a detailed Bill of Quantities (BOQ) outlining the costed elements required for the successful setup, development and operation of the Central Control Unit (CCU), to be established at FBR Headquarters, Islamabad.

- The BOQ must clearly separate and provide a full break-down of one-time setup costs and recurring costs and be submitted in the structured format.
- All unit prices must be quoted inclusive of all components.
- Vendors must justify any bundled items or package pricing in a short technical note or appendix.

Vendors must provide unit-wise and cost-wise breakdowns for at least the following (non-exhaustive) items:

Sr. No.	Description	Quantity / Capacity
1.	Software's License	All Operating Systems & Software License along with relevant details like Perpetual, Yearly, User Based, Core Based, Capacity Based. Detail to be provided for each software component separately
2.	Implementation Services	Breakdown of Implementation

		Services at Man Day Rate Level and Resource Category Level
3.	CCU Operation Staffing	Monthly Staffing cost at Job Seniority Level
4.	Services and Support	Annual maintenance charges SLA-Based Technical Support

### Evaluation Criteria

The evaluation shall follow Two Stage procedure and Quality & Cost Based Selection in accordance with the Public Procurement Rules 2004. Only bids securing a minimum of 80% of the total technical score shall be eligible for financial evaluation. The vendor offering the **lowest evaluated financial** bid among technically qualified vendors shall be selected as the Most Advantageous Bid (MAB).

### Technical Evaluation (Total: 120 Marks, 80% Required to Pass)

#### A. Technical Solution (60 Marks)

Criteria	Description	Marking	Documents Required
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<b>Solution Design</b>	End-to-end CCU solution aligned to scope showing data integration, stream processing, analytical store, and dashboard and alert architecture implemented securely and reliably	0-30 marks based on completeness of design, clarity of end-to-end data flow, and robustness of proposed methodology	Annotated architecture diagram, sizing summary, high-level architecture, and proposed methodology
<b>Operations and User Experience</b>	Vendor must demonstrate how CCU operators will monitor interventions and respond to events: dashboards, alert workflow, and operating model including roles and 24/7 shift coverage	0-10 marks based on operator workflow and role-based usage	Staffing plan with roles, headcount, and shift coverage; sample dashboard or alert screens; short list of key KPIs and alerts to be monitored
<b>Security, Backup, and Disaster Recovery</b>	Description of security controls for data in transit and at rest, access control approach, audit logging, and high-level backup and DR approach	0-10 marks based on security protocols (RBAC, MFA, encryption), alignment with ISO 27001 or NIST, and completeness of DR plan	Cybersecurity note referencing encryption protocols and access control setup; detailed CCU DR plan
<b>Vendor Presentation</b>	Vendor shall present the proposed solution and walk through CCU implementation and	0-10 marks based on clarity and confidence that vendor	Presentation to be delivered in person before the

<b>and Solution Walkthrough</b>	operations including integration approach, dashboard and alert workflow, and security and DR posture	understands scope and risks	evaluation committee
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## B. Historical Experience (40 Marks)

Criteria	Description	Max Marks	Marking	Documents Required
Experience in Deploying Similar Solutions	Demonstrated experience in delivering CCUs, Realtime Analytics, Command Centers, NOC/IOC, or similar centralized monitoring and coordination solutions over the past five years. Minimum three referenced projects of similar nature with contract value of USD 500,000 or above (or PKR equivalent), each live for a minimum of twelve months	15	3 marks per project	Valid contract or agreement, project completion certificate, or implementation report clearly referencing scope of real-time monitoring and system deployment
Experience in Integration	Demonstrated experience in integrating with diverse	15	3 marks per project	System architecture diagrams, API integration

of Digital Systems	field systems and standardizing data from multiple sources into centralized databases. Each referenced project must have been live for at least six months			documentation, project reports showing end-to-end data flow, or client attestations
Experience with Centralized Dashboards and Alert Engines	Prior deployments where centralized dashboards and alert engines were used to visualize operational data, detect anomalies, and support real-time monitoring or enforcement actions. Each referenced project must have been live for at least six months	10	2 marks per project	BOQ documents, deployment photos, integration documentation, or field reports

### C. Company Profile (20 Marks)

Criteria	Description	Max Marks	Marking	Documents Required
Local Presence	Vendor must demonstrate strong and sustained local presence in Pakistan with on-ground offices	10	0-10 marks based on adequacy, relevance, and maturity	HR certificate or affidavit from authorized company representative confirming current

	and technical staff across infrastructure, system integration, software development, analytics, and operations sufficient to support implementation and 24/7 CCU operations		of local presence	technical staff strength with department-wise distribution; lease agreement, utility bills, or incorporation certificate evidencing operating presence in Pakistan
Annual Financial Turnover	Average annual turnover over the last five years in PKR	10	Above PKR 3.0 Billion: 10 marks; At or above PKR 2.0 Billion: 7 marks; At or above PKR 1.5 Billion: 5 marks; At or above PKR 1.0 Billion: 2marks	Audited financial statements (Profit and Loss, Balance Sheet, Statement of Cash Flows) for last three fiscal years certified by a chartered accountant

**Note: Technical Evaluation Passing Criteria**

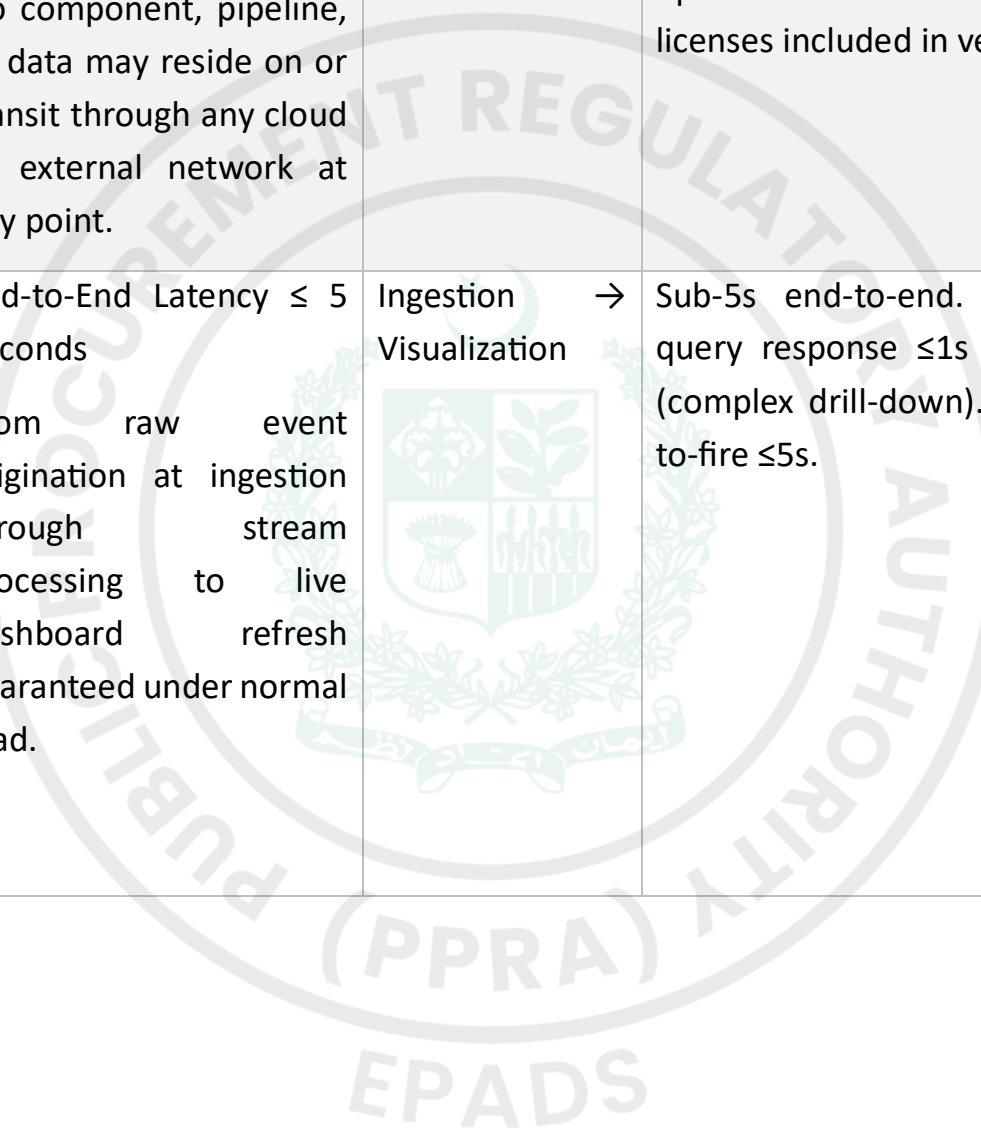
- Minimum Threshold for technical qualification is 70%

**Weightage:**

Technical Evaluation: 70%

Financial Evaluation: 30%

## Mandatory Clauses for Solution Design of LOT

#	Requirement	Layer / Domain	Mandatory Specification
1	<p>Full On-Premise Deployment</p> <p>No component, pipeline, or data may reside on or transit through any cloud or external network at any point.</p>	All 5 layers	100% on-premise at FBR-designated CCU site. Zero internet dependency for operations. All OS and software licenses included in vendor proposal.
2	<p>End-to-End Latency <math>\leq</math> 5 Seconds</p> <p>From raw event origination at ingestion through stream processing to live dashboard refresh guaranteed under normal load.</p>	<p>Ingestion → Visualization</p> 	<p>Sub-5s end-to-end. Analytical store query response <math>\leq</math>1s (standard) / <math>\leq</math>5s (complex drill-down). Alert detection-to-fire <math>\leq</math>5s.</p>

<p><b>3</b></p>	<p>Full-Stack Integration with All FBR Digital Interventions</p> <p>Vendor must integrate all systems (POS, DI, CTS, DES, etc.) from day one, plus support future onboarding without architectural rework.</p>	<p>Data Ingestion Layer</p>	<p>Log-based CDC mandatory (no polling) and Event ingestion and processing. Native support for Oracle, SQL Server, PostgreSQL, MySQL, Teradata.</p>
<p><b>4</b></p>	<p>24/7 CCU Staffing &amp; Operations</p> <p>Vendor is directly responsible for deploying, managing, and maintaining a fully staffed operations team at the CCU site for the entire 3-year contract term.</p>	<p>HR &amp; Operations</p>	<p>Minimum roles: 1 CCU Manager, 1 Infra Engineer, 2 DevOps, 2 Integration Engineers, 2 App Engineers, 2–4 Day Operators, 1–2 Night Operators. 3 rotational shifts, CVs submitted with bid.</p>

5	Professional Grade deployment of Realtime first Data Ecosystem.	Vendor Experience	Vendor must demonstrate local experience is deployment of Real Time First Data Ecosystem.
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## Liquidated Damages

### 1. Scope of Penalty Application:

- The Vendor must implement the agreed system within the specified timeline as outlined in the Project Plan.
- Failure to implement the system within the agreed timeframe will result in the following penalties.

### 2. Liquidated Damages:

- **Rate:** A penalty of 0.2% of the total project value per day of non-compliance.
- **Maximum Deduction:** The cumulative penalty shall not exceed the value of the performance guarantee submitted by the Vendor.

### 3. Escalation of Non-Compliance:

- If the delay or failure extends beyond 30 days, PRAL reserves the right to:
  - Terminate the contract as per GCC Clause 42.
  - Invoke the performance guarantee to recover damages and initiate reallocation of the project to alternate suppliers.

### 4. Grace Period and Exceptions:

- A grace period of 5 working days may be provided under exceptional circumstances upon prior written approval from PRAL.

- No penalties shall be applied in cases where the delay is caused by factors beyond the Vendor's control, provided the Vendor notifies PRAL in writing within 48 hours of identifying the issue.

#### 5. Enforcement Mechanism:

- The penalty will be calculated and deducted from the Vendor's subsequent payments.
- Any disputes regarding the imposition of penalties shall follow the Procedure for Dispute Resolution (GCC Clause 45).

#### Software and Services Warranty:

The Supplier/Contractor shall provide a warranty for all software, configurations, integrations, and services delivered under this Contract for a period of **three (03) years** from the date of Final Acceptance/Commissioning (or Go-Live/Phase -III as mentioned in the scope of work section). During this period, the Supplier/Contractor shall rectify, at no additional cost, any defects, bugs, performance issues, or non-conformities identified in the delivered solution and associated deliverables.

## LOT II

### **RACK MOUNT SERVERS**

#### **Specifications**

##### **Rack Mount Servers:**

- 2 x Intel® Xeon® (Gold 65xxY+ Processor 60M Cache, 2.50 GHz, 32 Cores Intel® latest chipset) or higher. Rack mounted 2U or 3U servers with redundant hot swappable power supplies and fans.

##### **Memory:**

- 1.5 TB memory DDR5 per server or higher. Each server Must have the capacity to be scalable up to 3 TB with Required Expansion Modules/Hardware or more without any additional hardware (apart from DIMM's).

##### **Hard Drives:**

Boot Device: Dedicated boot flash card, minimum 450 GB

- Primary Storage: 2 × 960 GB NVMe SSDs or higher
- Storage Bays: Hot-swappable hard disk drives supported

Note: FBR will retain faulty Hard Drives.

##### **Server RAID:**

- System should have integrated RAID 1, 5, 6 and 10 with on-board RAID controllers or PCIE Card based, with Online Expansion, and Hot Swappable Drives.

##### **USB:**

- Ports Standard USB ports

##### **HBA Interface:**

- 2 HBA NVMe Ready cards with dual ports of 32Gbps or higher data transmission speed. Auto negotiate to 16 & 8 Gbps, along with the required SFP's.

##### **Network Interfaces:**

- Dual OPTICAL 2 x 25 Gbps Ethernet Protocol interface (with SFP fully populated) auto-negotiate to 10Gbps.
- 2x1Gbps Ethernet Ports
- 1x1Gbps management

##### **Operating System Support:**

- Support for the latest version of all operating systems from Microsoft (x86), Linux, Ubuntu, RHEL, SUSE, VMware/Citrix/Oracle/Microsoft etc.

##### **KVM along with allied accessories:**

- Remote management solution Out of band management with licenses and Hardware Based KVM with keyboard for Console Management.
- All accessories which include installation (Power and cabling) of rack and servers and network connectivity as well.

**Install Media:**

- Non-licensed Bootable media/ISO Files for latest version Windows and of ESXI with embedded drivers for server Hardware including, HBA, Network and Raid
- Comprehensive post-sales support for hardware, software, and licenses for three (03) years with 24x7 extendable support.
- OEM written commitment for support and services, with dedicated support engineers from the supplier.
- Critical spare components must be available locally in Pakistan.
- Servers must be supplied through an OEM-authorized partner with the highest level of partnership in Pakistan.
- OEM must have a minimum of ten (10) years’ experience in manufacturing and supplying enterprise-grade rack mount servers.
- OEM authorized partner must provide nationwide support including Islamabad, Lahore, and Karachi.
- Documentary evidence required confirming availability of spare parts in Pakistan with next business day (NBD) delivery in major cities.
- Firmware, software, and patch upgrades must be performed proactively during the warranty period, with review at least once per year.
- All equipment must be quoted with comprehensive support including parts and labor, with year-wise breakup as per completion schedule, and no additional labor charges.

Installation and configuration must be carried out by certified engineers from the supplier. Operational manuals must be provided, including operational procedures and lifecycle or replacement guidelines.

**BILL OF QUANTITY**

Sr.No	Equipment Detail	QUANTITY
1.	Rack Mount Servers (Along with all allied accessories and installation)	5

**Warranty**

Comprehensive post-sales support for hardware and software for three (03) years with 24x7 extendable support. Documentary evidence required confirming availability of spare parts in Pakistan with next business day (NBD) delivery in major cities.

### Delivery Timelines:

The delivery timeline for the supply, installation, and commissioning of Servers will be 10–12 weeks from the date of issuance of the Purchase Order. However, PRAL reserves the right to extend or revise the delivery timeline as deemed necessary.

### Technical Evaluation Criteria

<b>TECHNICAL EVALUATION CRITERIA</b>				
<b>Sr #</b>	<b>Descriptions</b>	<b>Total Points</b>	<b>Scoring Points</b>	<b>Remarks</b> (Attachment of relevant evidence in each case is mandatory. In case of non-compliance no mark will be awarded)
<b>1</b>	<b>Client Portfolio/ Relevant Experience</b>	<b>20</b>		
	Supplied & installed similar nature of Equipment to more than 10 local/international/multinational clients including public sector or private sector organizations:		<b>20</b>	<b>Documentary proof:</b> (Purchase/Service order/ copies of contract with contact details of clients should be furnished, along with completion certificates *Multiple projects with same client will be counted as one. Note: A Prospective bidder who has submitted completion certificates for the past projects has to submit 25% satisfactory certificates
	Supplied & installed similar nature of Equipment to more than 06 but less than or equal to 10 local/international/multinational clients including public sector or private sector organizations:		<b>15</b>	
	Supplied & installed similar nature of Equipment to more than 03 but less than or equal to 06 local/international/multinational clients including public sector or private sector organizations:		<b>10</b>	
	Less than 3 projects.		<b>Disqualification</b>	
<b>2</b>	<b>Compliance to the Technical Specifications and scope of work mentioned in the bidding document</b>	<b>40</b>		

	100% Compliance to the Specifications and scope of work / services mentioned in the bidding document.		40	If the quoted product is fully complied with the specifications mentioned in the Scope of Work, full Marks will be given, else zero (0). (Bidder to share the copies of technical literature, Data Sheet & Brochures from the manufacturer, which may be verified on the Internet)
<b>4</b>	<b>Presence of the OEM or OEM's authorized Tier 1 partner in Pakistan for Warranty &amp; technical Support</b>	<b>10</b>		
	Presence of Principal/OEM or OEM's authorized Tier 1 partner in Pakistan for equipment warranty & Support Services		<b>10</b>	A Written confirmation from Principal/OEM on their Letterhead is required confirming their or their authorized tier 1 partner presence in Pakistan for equipment warranty & Support services.
<b>5</b>	<b>Compliance to the delivery timelines for the supply, installation, commissioning of servers</b>	<b>15</b>		
	The Delivery Timelines for the supply, installation, commissioning of servers is 10-12 weeks after issuance of Purchase Order, Bidder to share compliance.		<b>15</b>	A written confirmation on Company's letterhead is required.
	12-14 weeks		<b>10</b>	
	14-16 weeks		<b>5</b>	
	above 16 weeks		<b>Disqualification</b>	
<b>6</b>	<b>Financial Turnover</b>	<b>15</b>		
	Annual turnover /revenue of the company is greater than or equal to 400 million (PKRs)		15	Documentary proof required (tax returns or

	Annual turnover /revenue of the company is less than 400 million (PKRs) but greater than or equal to 300 million (PKRs)		10	financial audited report from registered firm/company for the year 2023-2024 or latest)
	Annual turnover /revenue of the company is less than 300 million (PKRs) but greater than or equal to 200 million (PKRs)		5	
<b>Total Technical Evaluation Score</b>			<b>100</b>	

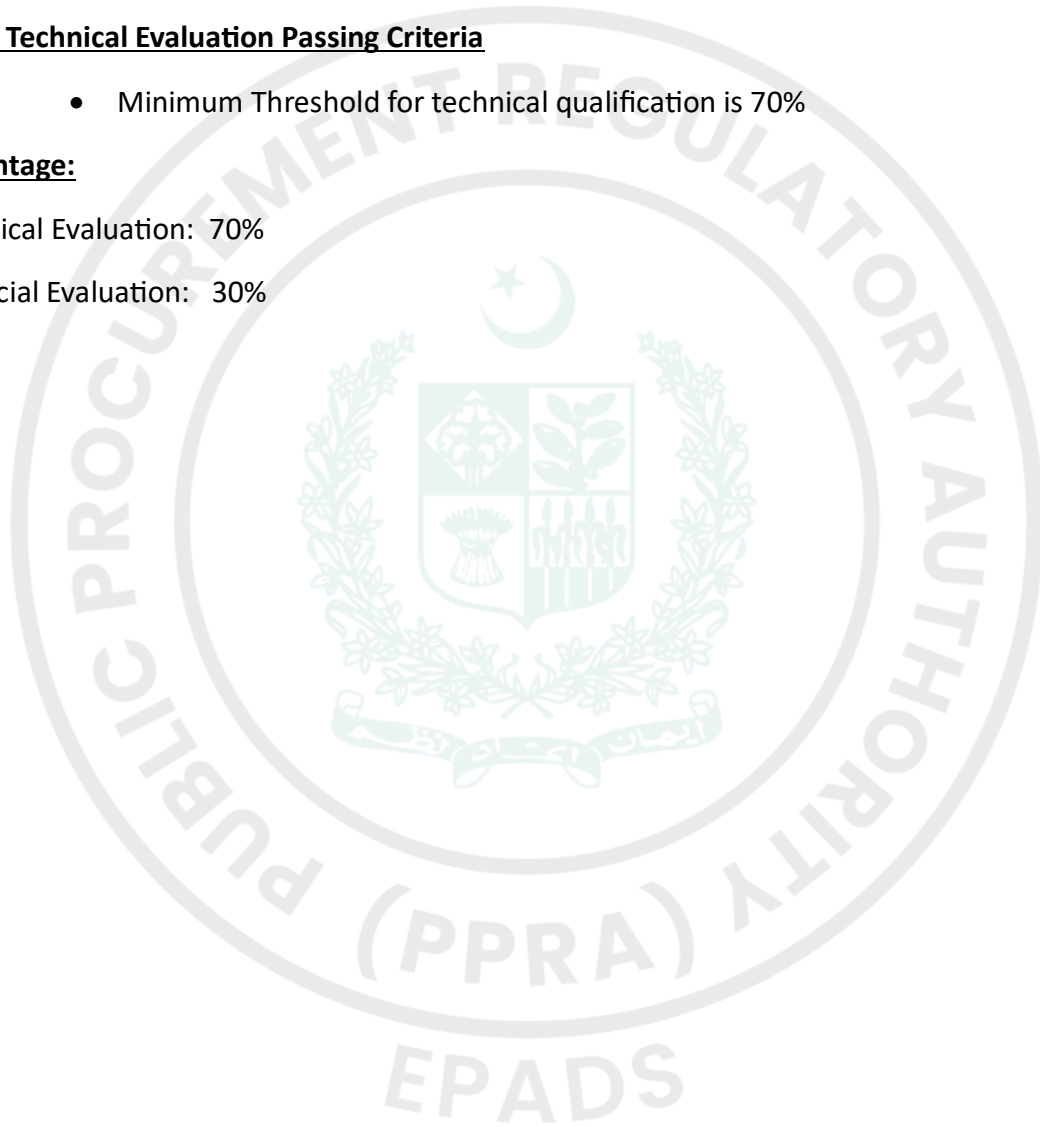
**Note: Technical Evaluation Passing Criteria**

- Minimum Threshold for technical qualification is 70%

**Weightage:**

Technical Evaluation: 70%

Financial Evaluation: 30%



## LOT III

### Option I

#### SAN(Storage Area Network) Expansion

##### **SAN Model: Dorado 8000**

125TB Useable Capacity Expansion:

- 8 x 30.72TB SSD NVMe Palm Encryption Disk with Caddy cases for Dorado 8000.
- The capacity upgrade required as separate pool, with minimum RAID 6 protection as per OEM best practices.
- Dedicated minimum 1 x hot spare for the capacity expansion pool.
- The capacity expansion must be provided with existing Dorado 8000 compression and de-duplication enablers.
- 3 years 24 x 7 Warranty & Support.
- Faulty Disk Media Retention.

#### **BILL OF QUANTITY**

<b>Sr.No</b>	<b>Equipment Detail</b>	<b>QUANTITY</b>
1.	Primary site : 8 x 30.72TB SSD NVMe	1
2.	Secondary site : 8 x 30.72TB SSD NVMe	1

#### **Warranty :**

Comprehensive post-sales support for hardware and software for three (03) years with 24x7 extendable support.

#### **Delivery Timelines:**

The delivery timeline for the supply, installation, and commissioning of SAN drives will be 10–12 weeks from the date of issuance of the Purchase Order. However, PRAL reserves the right to extend or revise the delivery timeline as deemed necessary.

<b>TECHNICAL EVALUATION CRITERIA</b>				
<b>Sr #</b>	<b>Descriptions</b>	<b>Total Points</b>	<b>Scoring Points</b>	<b>Remarks</b> (Attachment of relevant evidence in each case is mandatory. In case of non-compliance no mark will be awarded)
<b>1</b>	<b>Client Portfolio/ Relevant Experience</b>	<b>20</b>		
	Supplied & Installed similar nature of Equipment to more than 10 local/international/multinational clients including public sector or private sector organizations:		<b>20</b>	<b>Documentary proof:</b> (Purchase/Service order/ copies of contract with contact details of clients should be furnished, along with completion certificates *Multiple projects with same client will be counted as one. Note: A Prospective bidder who has submitted completion certificates for the past projects has to submit 25% satisfactory certificates
	Supplied & Installed similar nature of Equipment to more than 06 but less than or equal to 10 local/international/multinational clients including public sector or private sector organizations:		<b>15</b>	
	Supplied & Installed similar nature of Equipment to more than 03 but less than or equal to 06 local/international/multinational clients including public sector or private sector organizations:		<b>10</b>	
	Less than 3 projects.		<b>Disqualification</b>	
<b>2</b>	<b>Compliance to the Technical Specifications and scope of work mentioned in the bidding document</b>	<b>40</b>		
	100% Compliance to the Specifications and scope of work / services mentioned in the bidding document.		<b>40</b>	If the quoted product is fully complied with the specifications mentioned in the Scope of Work, full Marks will be given, else zero (0). (Bidder to share the copies of technical literature, Data Sheet & Brochures from the manufacturer, which may

				be verified on the Internet)
<b>4</b>	<b>Presence of the OEM or OEM's authorized Tier 1 partner in Pakistan for Warranty &amp; technical Support</b>	<b>10</b>		
	Presence of Principal/OEM or OEM's authorized Tier 1 partner in Pakistan for equipment warranty & Support Services		<b>10</b>	A Written confirmation from Principal/OEM on their Letterhead is required confirming their or their authorized tier 1 partner presence in Pakistan for equipment warranty & Support services.
<b>5</b>	<b>Compliance to the delivery timelines for the supply, installation, commissioning of servers</b>	<b>15</b>		
	The Delivery Timelines for the supply, installation, commissioning of servers is 10-12 weeks after issuance of Purchase Order, Bidder to share compliance.		<b>15</b>	A written confirmation on Company's letterhead is required.
	12-14 weeks		<b>10</b>	
	14-16 weeks		<b>5</b>	
	above 16 weeks		<b>Disqualification</b>	
<b>6</b>	<b>Financial Turnover</b>	<b>15</b>		
	Annual turnover /revenue of the company is greater than or equal to 400 million (PKRs)		<b>15</b>	Documentary proof required (tax returns or financial audited report from registered firm/company for the year 2023-2024 or latest)
	Annual turnover /revenue of the company is less than 400 million (PKRs) but greater than or equal to 300 million (PKRs)		<b>10</b>	
	Annual turnover /revenue of the company is less than 300 million (PKRs) but greater than or equal to 200 million (PKRs)		<b>5</b>	
<b>Total Technical Evaluation Score</b>		<b>100</b>		

**Note: Technical Evaluation Passing Criteria**

- Minimum Threshold for technical qualification is 70%

**Weightage:**

Technical Evaluation: 70%

Financial Evaluation: 30%



## **LOT III**

### **Option II**

#### **SCOPE OF THE WORK:**

The following scope of work identifies the tasks and responsibilities that the qualifying Company/Firm shall deliver upon, by working closely with the Network & Infrastructure Department of PRAL:

#### **STORAGE AREA NETWORK (SAN) TECHNICAL SPECIFICATIONS**

##### **Storage Type:**

The proposed Storage System should be Mission Critical Storage Array. SAN should be FC enabled. The proposed Storage System must be 100% redundant with no single point of failure. It must have load balancing and seamless failover capability in case of a component failure.

##### **Controllers:**

Proposed Storage should have dual (2) physical storage controllers, with support of scale up and scale out features to add more hardware capability on demand with Active-Active architecture. Storage systems should support true active/active LUN access and controller architecture with load balancing, load sharing features. Software upgrades must be online without any need for path failover/failback.

##### **Cache:**

Minimum 384 GB or higher Cache for proposed storage system.

##### **Capacity Sizing:**

The proposed solution must deliver a minimum of 125 TB or higher usable capacity (before compression and deduplication), built on an enterprise-grade, end-to-end NVMe architecture including NVMe SSDs. Individual SSD capacity must not exceed 8TB And Drives must be NVMe-based preferably MLC/TLC or better. Drives shall be configured in RAID 5 or RAID 6.

Only physical (usable) capacity will be considered. On the above useable capacity effective Capacity must be guaranteed with a minimum ratio 2:1 or higher. Hot spares as per manufacturer best practices.

- Raid group / disk group size should not be larger than 18 to reduce chances of data loss.
- Hot spares as per manufacturer best practices.
- Minimum 02 disks per raid group should be spared.
- Additionally, global hot spare disk should be included for all raid group.
- Space efficient LUN Cloning and copying.

- RAID level 1, 5 or 6 should be supported if proposed solution is with traditional RAID or Dynamic RAID/equivalent.

#### **Scalability:**

- The solution should support at least 100 disk drives or higher. Storage should be scalable up to 250 TB usable capacity or higher without requiring additional hardware other than disks. The proposed solution should be able to handle a minimum of 20,000 IOPs or higher, with a 60% Read and 40% Write workload profile, using a 16K or higher block size."
- Migration and Virtualization Storage System should be equipped with migration and virtualization licenses to ensure seamless automated migration & management of other SAN storages box from this proposed solution. Storage System must have capability to Seamless migrate data from old storage system. If virtualization of third-party SANs is not natively supported, the solution should provide tools or integration for non-disruptive migration.

#### **Encryption & De-Duplication Method**

- Storage System disks should be encrypted. De-Duplication and minimum 2X or higher compression must be included for the total capacity. Data Reduction Guarantee must be provided by OEM for 2:1 or higher. Storage system should be capable of compaction technology.

#### **Data Protection**

- The Storage System must have feature to integrated remote backup and recovery solution.
- The Storage System must have zero data lose sync and A Sync replication.
- The Storage System must have protected snapshot solution.
- The Storage System must support application-consistent snapshots through integration with major operating systems and enterprise applications (such as Oracle, VMware, and Microsoft), either natively or through OEM-provided tools.

#### **Anti Ransomware:**

- The proposed storage system must either include a native anti-ransomware protection feature or support seamless integration with an industry-standard anti-ransomware solution. In case a native feature is not available, the bidder shall provide and implement a compatible anti-ransomware solution as part of the overall offering.

#### **Host Connectivity Ports and Protocols:**

- Proposed storage system must have a minimum of 4 x 32Gbps FC ports per controller or higher. 4 x 10G IP Port with SFP+ Per Controller.

**Thin Provisioning:**

- Storage system should be capable of Thin/Virtual Provisioning for total storage capacity. License must be included (if required).

**Management Software Suite:**

- The proposed Storage System solution must include a comprehensive storage management toolset for administrative and system management.
- The software suite must include a license to manage total capacity. Software for Trend-analysis, Reporting, and system-capacity management to provide real-time and historical storage performance data analysis and be able to pinpoint performance bottlenecks on the storage array.
- Should be capable of monitoring Front end port level performance monitoring and reporting. Should be capable of monitoring LUNs level performance and reporting.
- Should be capable of generating logs and keeping them for at least three months.
- The software suite must have a license to monitor total capacity. License for all modules must be included (wherever required).

**Point-in-time copy solutions:**

- Storage System should provide immutable snapshot and clones capability for total storage capacity.
- The Proposed storage system solution must include space efficient LUN snapshot or copy capabilities retaining only differential data.
- The storage system solution must include a snapshot management application with scheduling capabilities. It should support integration with major operating systems and enterprise applications to enable application-consistent snapshots, including but not limited to Oracle, VMware, and Microsoft workloads.

**Availability:**

- The proposed storage system solution must not have any single Point of Failure.
- All critical hardware components should be redundant and provide 99.9999% availability.
- The proposed storage system should be able to perform self-diagnostics, automatic alerts to admin for faults or performance issues with a call home facility for proactive detection of potential failures.
- Storage system must be capable of:
  - a) Volume resizing
  - b) RAID migrations
  - c) Microcode/Software upgrades, configuration changes
  - d) Capacity enhancement

Multipathing Software: Should support native multipath device drivers / software for the host operating systems (AIX, Windows, Linux, VMware and other hypervisor solutions etc.)

#### **Deployment and Configuration:**

- Implementation of the Storage systems must be done by highest-level certified Partners. The installation & configuration should be carried out by professional level certified engineers from partners backed by OEM. All required convertors / cables and allied accessories must be provided by the supplier.
- A complete project plan must be shared prior to deployment.
- The bidder shall configure and implement all available features and functionalities of the complete solution, ensuring optimal performance and integration.
- The vendor is responsible for configuring the SAN as per the demand and requirement.
- The bidder shall provide detailed documentation of each deployment step along with the screenshots.
- The local support engineer assigned for the rectification of technical issues must be Professional level certified engineer and have a minimum of 5 years of relevant experience. The PRAL team will not permit any inexperienced personnel to access the system in the event of a technical issue.
- The successful bidder must provide a comprehensive three-day hands-on training program covering deployment, operations, and features, conducted at their local office for a minimum of four (4) designated personnel. Training certificates must be issued upon completion.
- The bidder is responsible for opening and managing OEM Technical Assistance Center (TAC) cases for hardware/software issues, Performing initial troubleshooting and fault isolation, Collaborating with OEM TAC engineers to resolve issues, providing timely updates on case progress to the PRAL representative, ensuring prompt resolution of issues within agreed-upon SLAs (Service Level Agreements), maintaining accurate records of TAC cases, including case numbers, descriptions, and resolution.
- In case of any hardware failure, backup equipment should be available.

#### **Service and Support Commitment by Bidder and OEM**

- The bidder shall provide 24x7 warranty technical support and next business day (NBD) parts replacement for the proposed storage systems and all associated equipment for a period of five (05) years, extendable upon mutual agreement.
- Support services must be delivered by qualified engineers holding relevant professional certifications in SAN/storage technologies, with a minimum of five (05) years of hands-on experience in managing and supporting SAN environments.
- If the bidder is unable to resolve an issue within the agreed service levels, the Original Equipment Manufacturer (OEM) shall provide direct escalation support through certified engineering staff until full resolution is achieved. Additionally, the OEM must maintain a registered local presence in Pakistan, with functional offices in at least the

major cities of Islamabad and Lahore, to ensure timely and efficient support services nationwide.

- The OEM must supply the required enterprise storage solution through its Authorized Partner holding the highest level of partnership in Pakistan. The bidder must have partnership for at least 3 years prior to the submission of the bid. A manufacturer's authorization letter and a valid partnership level certificate must be submitted with the bid.
- The OEM must be registered with SECP and relevant Tax Authorities in Pakistan. Relevant documentation must be attached with the bid.
- Bidder must provide evidence from manufacturer to have spare parts in Pakistan with NBD (Next business day) commitment in Islamabad & Lahore. The OEM must have a warehouse in Lahore & Islamabad. Relevant hardware Inventory detail in the warehouse should also be provided. (Documentary evidence required).
- Firmware upgrades of Storage Infrastructure and SAN switches must be done proactively during the warranty coverage period. This should be done at least twice a year.

**Warranty:**

- The bidder shall provide 24x7 warranty technical support and next business day (NBD) parts replacement for the proposed storage systems and all associated equipment for a period of three (03) years, extendable upon mutual agreement.

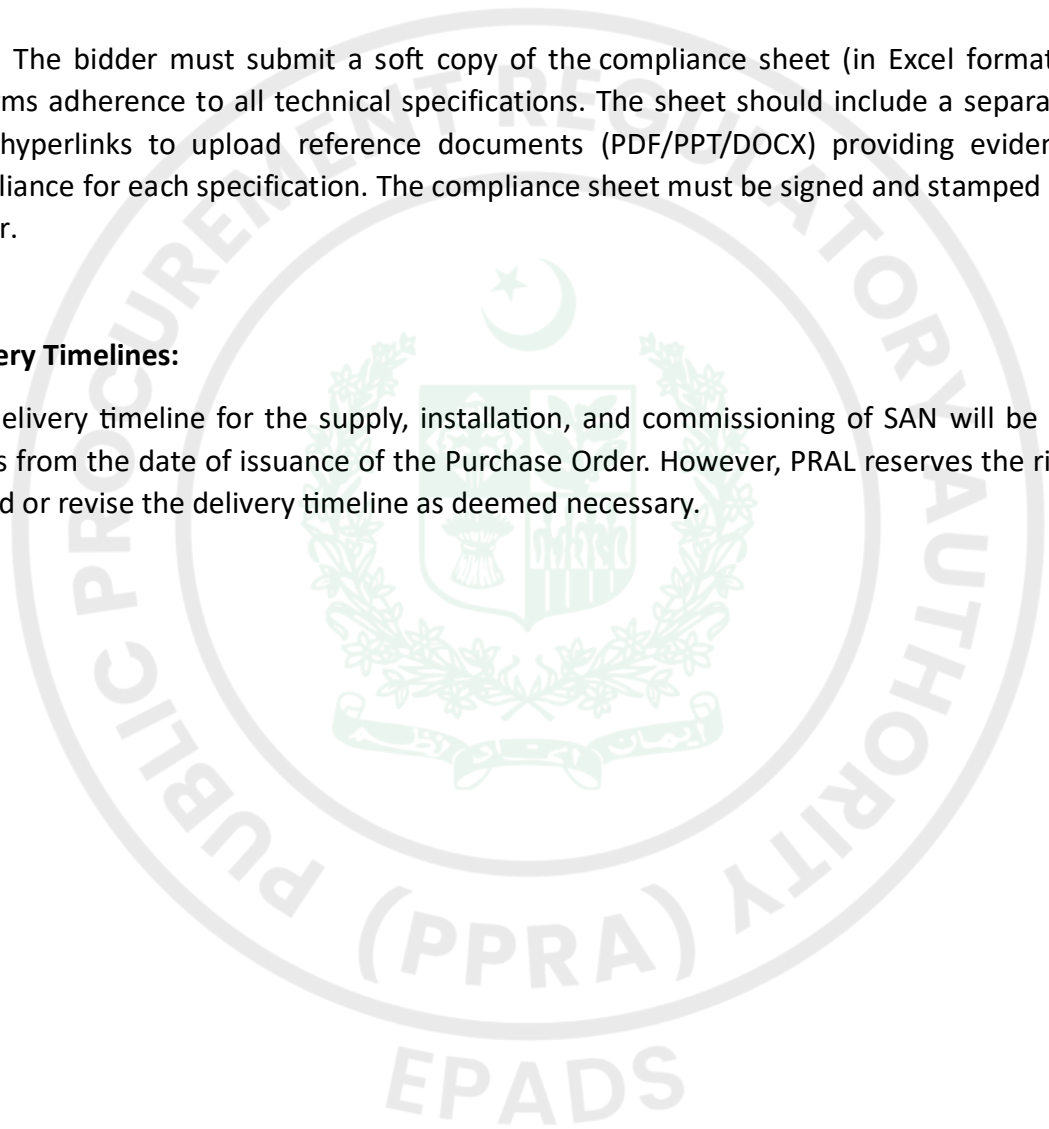
### BILL OF QUANTITIES

Sr.#	Item	Quantity
1.	Storage Area Network (SAN) along with all allied accessories.	1
2.	Three-day hands-on training for four resources at a local training center.	1

**Note:** The bidder must submit a soft copy of the compliance sheet (in Excel format) that confirms adherence to all technical specifications. The sheet should include a separate tab with hyperlinks to upload reference documents (PDF/PPT/DOCX) providing evidence of compliance for each specification. The compliance sheet must be signed and stamped by the bidder.

**Delivery Timelines:**

The delivery timeline for the supply, installation, and commissioning of SAN will be 10–12 weeks from the date of issuance of the Purchase Order. However, PRAL reserves the right to extend or revise the delivery timeline as deemed necessary.



<b>TECHNICAL EVALUATION CRITERIA</b>				
<b>Sr #</b>	<b>Descriptions</b>	<b>Total Points</b>	<b>Scoring Points</b>	<b>Remarks</b> (Attachment of relevant evidence in each case is mandatory. In case of non-compliance no mark will be awarded)
<b>1</b>	<b>Client Portfolio/ Relevant Experience</b>	<b>20</b>		
	Supplied & Installed similar nature of Equipment to more than 10 local/international/multinational clients including public sector or private sector organizations:		<b>20</b>	<b>Documentary proof:</b> (Purchase/Service order/ copies of contract with contact details of clients should be furnished, along with completion certificates *Multiple projects with same client will be counted as one. Note: A Prospective bidder who has submitted completion certificates for the past projects has to submit 25% satisfactory certificates
	Supplied & Installed similar nature of Equipment to more than 06 but less than or equal to 10 local/international/multinational clients including public sector or private sector organizations:		<b>15</b>	
	Supplied & Installed similar nature of Equipment to more than 03 but less than or equal to 06 local/international/multinational clients including public sector or private sector organizations:		<b>10</b>	
	Less than 3 projects.			<b>Disqualification</b>
<b>2</b>	<b>Compliance to the Technical Specifications and scope of work mentioned in the bidding document</b>	<b>40</b>		
	100% Compliance to the Specifications and scope of work / services mentioned in the bidding document.		<b>40</b>	If the quoted product is fully complied with the specifications mentioned in the Scope of Work, full Marks will be given, else zero (0). (Bidder to share the copies of technical literature, Data Sheet & Brochures from the manufacturer, which may be verified on the Internet)

4	<b>Presence of the OEM or OEM's authorized Tier 1 partner in Pakistan for Warranty &amp; technical Support</b>	10		
	Presence of Principal/OEM or OEM's authorized Tier 1 partner in Pakistan for equipment warranty & Support Services		10	A Written confirmation from Principal/OEM on their Letterhead is required confirming their or their authorized tier 1 partner presence in Pakistan for equipment warranty & Support services.
5	<b>Compliance to the delivery timelines for the supply, installation, commissioning of servers</b>	15		
	The Delivery Timelines for the supply, installation, commissioning of servers is 10-12 weeks after issuance of Purchase Order, Bidder to share compliance.		15	A written confirmation on Company's letterhead is required.
	12-14 weeks		10	
	14-16 weeks		5	
	above 16 weeks		<b>Disqualification</b>	
6	<b>Financial Turnover</b>	15		
	Annual turnover /revenue of the company is greater than or equal to 400 million (PKRs)		15	Documentary proof required (tax returns or financial audited report from registered firm/company for the year 2023-2024 or latest)
	Annual turnover /revenue of the company is less than 400 million (PKRs) but greater than or equal to 300 million (PKRs)		10	
	Annual turnover /revenue of the company is less than 300 million (PKRs) but greater than or equal to 200 million (PKRs)		5	
<b>Total Technical Evaluation Score</b>		<b>100</b>		

**Note: Technical Evaluation Passing Criteria**

- Minimum Threshold for technical qualification is 70%

**Weightage:**

Technical Evaluation: 70%

Financial Evaluation: 30%



## LOT IV

### LAYER II NETWORK SWITCHES (for CCU Room)

#### **Layer II, 48 Port Access Switches**

- Layer 2 POE enabled 48 port switches (The power budget requirement is 300 watts in order to utilize half of the POE ports)
- Switching capacity 160 Gbps or higher for each box.
- 10G ports x 4 or higher optical for each box (Fully populated fixed ports or Vendor will provide 10 G Multi mode SFP for each port). 10G SFPs with minimum 300-meter range in order to reach Core Layer 3 Switch.
- 48 x 1G RJ-45 copper ports on each switch.
- All ports must be fully populated and all required convertors, connectors, cables and all other allied accessories must be provided and installed by the supplier.
- The Vendor must ensure connectivity of Access Switches with Core, and integration with existing network equipment.
- Must have Latest Stable Version and should be upgradable as and when required without service disruption and outage.
- Major and minor upgrade should be available.
- Solution should be Enterprise grade and provide all latest deployment of switching models.
- Multi-vender interoperability.
- Support for Image upgrade via FTP, TFTP and or WebUI.
- Solution provides a means for exporting Configuration out of the box.
- Solution should be STP free and multipathing.
- Should offer line-rate traffic throughput instead of blocking architecture.
- All standard protocols, QoS, IP-multicast reliability, IP v4 IPv6, VLANs.
- Security, jumbo frame support, switching.
- MAC and port security, i.e. Port-based, LAG port, Traffic Monitoring, VLAN-based, Filter-based and any other features.
- Should offer a variety of responses including, syslog, SNMP (all versions) traps, telemetry and other latest monitoring protocols.
- Should support Network traffic analysis.
- should be compatible with all major/ known logging software and NMSs.
- HA/Stack/Failover/Redundancy.
- Support for internal and externally integrated platforms for Administrators' Authentication.
- CLI (Command Line Interface).
- GUI (graphical User Interface) feature will be preferred.
- Role-based CLI management and access.
- The switch should support role-based authentication and administration.
- Provide filtering based on the IP field, source/destination IP address/subnet, and source/destination TCP/UDP port number on a per-VLAN or per-port basis.

- The system should have air flow mechanism.
- System should have smart OS controlled fans.
- Comprehensive post-sales support for hardware, software, and licenses for three (03) years with 24x7 extendable support.

**Allied Network Accessories.**

**Fiber Cables:**

All the cables must be protected through duct and pipes and must be properly hanged with the roof top. The quantity is as per actual and the Vendor is required to visit for the site survey and finalize all required accessories e.g Fiber cable lengths, types, cable tray and duct length estimation etc

**BILL OF QUANTITY**

TECHNICAL BOQ		
Sr.No	Equipment Detail	QUANTITY
1.	Layer II network switches (for CCU room)	2

**Warranty:**

Comprehensive post-sales support for hardware, software, and licenses for three (03) years with 24x7 extendable support.

**Delivery Timelines:**

The delivery timeline for the supply, installation, and commissioning of Switches will be 10–12 weeks from the date of issuance of the Purchase Order. However, PRAL reserves the right to extend or revise the delivery timeline as deemed necessary.

<b>TECHNICAL EVALUATION CRITERIA</b>				
<b>Sr #</b>	<b>Descriptions</b>	<b>Total Points</b>	<b>Scoring Points</b>	<b>Remarks</b> (Attachment of relevant evidence in each case is mandatory. In case of non-compliance no mark will be awarded)
<b>1</b>	<b>Client Portfolio/ Relevant Experience</b>	<b>20</b>		
	Supplied & Installed similar nature of Equipment to more than 10 local/international/multinational clients including public sector or private sector organizations:		<b>20</b>	<b>Documentary proof:</b> (Purchase/Service order/ copies of contract with contact details of clients should be furnished, along with completion certificates
	Supplied & Installed similar nature of Equipment to more than 06 but less than or equal to 10 local/international/multinational clients including public sector or private sector organizations:		<b>15</b>	*Multiple projects with same client will be counted as one.
	Supplied & Installed similar nature of Equipment to more than 03 but less than or equal to 06 local/international/multinational clients including public sector or private sector organizations:		<b>10</b>	Note: A Prospective bidder who has submitted completion certificates for the past projects has to submit 25% satisfactory certificates
	Less than 3 projects.		<b>Disqualification</b>	
<b>2</b>	<b>Compliance to the Technical Specifications and scope of work mentioned in the bidding document</b>	<b>40</b>		
	100% Compliance to the Specifications and scope of work / services mentioned in the bidding document.		<b>40</b>	If the quoted product is fully complied with the specifications mentioned in the Scope of Work, full Marks will be given, else zero (0). (Bidder to share the copies of technical literature, Data Sheet & Brochures from the manufacturer, which may be verified on the Internet)

4	<b>Presence of the OEM or OEM's authorized Tier 1 partner in Pakistan for Warranty &amp; technical Support</b>	10		
	Presence of Principal/OEM or OEM's authorized Tier 1 partner in Pakistan for equipment warranty & Support Services		10	A Written confirmation from Principal/OEM on their Letterhead is required confirming their or their authorized tier 1 partner presence in Pakistan for equipment warranty & Support services.
5	<b>Compliance to the delivery timelines for the supply, installation, commissioning of servers</b>	15		
	The Delivery Timelines for the supply, installation, commissioning of servers is 10-12 weeks after issuance of Purchase Order, Bidder to share compliance.		15	A written confirmation on Company's letterhead is required.
	12-14 weeks		10	
	14-16 weeks		5	
	above 16 weeks		<b>Disqualification</b>	
6	<b>Financial Turnover</b>	15		
	Annual turnover /revenue of the company is greater than or equal to 400 million (PKRs)		15	Documentary proof required (tax returns or financial audited report from registered firm/company for the year 2023-2024 or latest)
	Annual turnover /revenue of the company is less than 400 million (PKRs) but greater than or equal to 300 million (PKRs)		10	
	Annual turnover /revenue of the company is less than 300 million (PKRs) but greater than or equal to 200 million (PKRs)		5	
<b>Total Technical Evaluation Score</b>		<b>100</b>		

**Note: Technical Evaluation Passing Criteria**

- Minimum Threshold for technical qualification is 70%

**Weightage:**

Technical Evaluation: 70%

Financial Evaluation: 30%



## LOT V

### CCU Video Wall Specifications:

#### Option 1

The CCU video wall will be installed on a 30 ft (W) × 8 ft (H) wall. The video wall shall provide high-quality display of dashboards, CCTV feeds, and other application outputs for 24×7 operations.

- The solution shall provide a continuous active display area of 30 ft (W) × 8 ft (H) for 24×7 control room operations.
- The solution shall be based on industrial-grade 55-inch or higher LCD video wall panels, provided that all panels within the same video wall system shall be of a single uniform size only. The final design shall ensure a consistent layout, identical aspect ratio, and maximum possible utilization of the defined 30 ft × 8 ft display area.
- Panels shall be IPS-type LCD or better.
- Display brightness shall be minimum 600-700 nits (typical) suitable for 24×7 control room operation.
- Resolution shall be Full HD (1920 × 1080) or higher per panel.
- Bezel width shall not exceed 1.8 mm (preferred); however, maximum allowable bezel shall not exceed 3.5 mm.
- Video wall controller shall be hardware-based and support 4K @ 60 Hz inputs/outputs, including HDMI, DisplayPort, SDI, and AV-over-IP sources.
- The system shall support multi-window layouts, drag-and-drop source management, preset scene configurations, and real-time display switching.
- The solution shall support scalable expansion of at least 30–50% additional display capacity without replacement of core controller hardware.
- The solution shall support integration with live CCTV feeds, dashboards, and application systems, with remote monitoring via web interface, SNMP, and dry contacts or alarm outputs for status reporting.
- Comprehensive post-sales support for hardware, software, and licenses shall be provided for three (03) years with 24×7 support and option for extension.
- The installed panels shall cover the primary operator visual area, while the surrounding concrete wall may remain visible in margins, subject to final approved installation design and ergonomic optimization.

## BILL OF QUANTITY

TECHNICAL BOQ		
Sr.No	Equipment Detail	QUANTITY
1.	Video Wall : 30 ft (W) × 8 ft (H).	1

### Warranty:

Comprehensive post-sales support for hardware and software for three (03) years with 24×7 extendable support. Documentary evidence required confirming availability of spare parts in Pakistan with next business day (NBD) delivery in major cities.

### Delivery Timelines:

The delivery timeline for the supply, installation, and commissioning of Video Wall will be 10–12 weeks from the date of issuance of the Purchase Order. However, PRAL reserves the right to extend or revise the delivery timeline as deemed necessary.

TECHNICAL EVALUATION CRITERIA				
Sr #	Descriptions	Total Points	Scoring Points	Remarks
1	<b>Client Portfolio/ Relevant Experience</b>	<b>20</b>		<b>Remarks</b> (Attachment of relevant evidence in each case is mandatory. In case of non-compliance no mark will be awarded)
	Supplied & Installed similar nature of Equipment to more than 10 local/international/multinational clients including public sector or private sector organizations:		<b>20</b>	<b>Documentary proof:</b> (Purchase/Service order/ copies of contract with contact details of clients should be furnished, along with completion certificates
	Supplied & Installed similar nature of Equipment to more than 06 but less than or equal to 10 local/international/multinational clients including public sector or private sector organizations:		<b>15</b>	

	Supplied & Installed similar nature of Equipment to more than 03 but less than or equal to 06 local/international/multinational clients including public sector or private sector organizations:		10	*Multiple projects with same client will be counted as one. Note: A Prospective bidder who has submitted completion certificates for the past projects has to submit 25% satisfactory certificates
	Less than 3 projects.		Disqualification	
2	<b>Compliance to the Technical Specifications and scope of work mentioned in the bidding document</b>	40		
	100% Compliance to the Specifications and scope of work / services mentioned in the bidding document.		40	If the quoted product is fully complied with the specifications mentioned in the Scope of Work, full Marks will be given, else zero (0). (Bidder to share the copies of technical literature, Data Sheet & Brochures from the manufacturer, which may be verified on the Internet)
4	<b>Presence of the OEM or OEM's authorized Tier 1 partner in Pakistan for Warranty &amp; technical Support</b>	10		
	Presence of Principal/OEM or OEM's authorized Tier 1 partner in Pakistan for equipment warranty & Support Services		10	A Written confirmation from Principal/OEM on their Letterhead is required confirming their or their authorized tier 1 partner presence in Pakistan for equipment warranty & Support services.
5	<b>Compliance to the delivery timelines for the supply, installation, commissioning of servers</b>	15		

	The Delivery Timelines for the supply, installation, commissioning of servers is 10-12 weeks after issuance of Purchase Order, Bidder to share compliance.		<b>15</b>	A written confirmation on Company's letterhead is required.
	12-14 weeks		<b>10</b>	
	14-16 weeks		<b>5</b>	
	above 16 weeks		<b>Disqualification</b>	
<b>6</b>	<b>Financial Turnover</b>	<b>15</b>		
	Annual turnover /revenue of the company is greater than or equal to 400 million (PKRs)		15	Documentary proof required (tax returns or financial audited report from registered firm/company for the year 2023-2024 or latest)
	Annual turnover /revenue of the company is less than 400 million (PKRs) but greater than or equal to 300 million (PKRs)		10	
	Annual turnover /revenue of the company is less than 300 million (PKRs) but greater than or equal to 200 million (PKRs)		<b>5</b>	
<b>Total Technical Evaluation Score</b>		<b>100</b>		

**Note: Technical Evaluation Passing Criteria**

- Minimum Threshold for technical qualification is 70%

**Weightage:**

Technical Evaluation: 70%

Financial Evaluation: 30%

## LOT V

### Option 2

The CCU video wall will be installed on a 30 ft (W) × 8 ft (H) wall. The video wall shall provide high-quality display of dashboards, CCTV feeds, and other application outputs for 24×7 operations.

- The CCU video wall shall provide a continuous active display area of 30 ft (W) × 8 ft (H) for 24×7 visualization of dashboards and application outputs.
- Only COB (Chip-on-Board) Direct View LED (DVLED) technology shall be accepted. LCD, OLED, SMD/IMD LED, or any bezel-based display solutions are not permitted.
- The display shall be fully seamless with no visible gaps or bezel effect, operating as a single unified canvas.
- Pixel pitch shall be ≤ 1.5 mm (preferred ≤ 1.2 mm).
- The system shall use modular LED cabinets with front service access, and modules shall be replaceable without dismantling the entire structure.
- Brightness shall be ≥ 600 nits (adjustable) with uniform display performance across the screen.
- Refresh rate shall be ≥ 3840 Hz with wide viewing angle ≥ 160°.
- The system shall be designed for 24×7 continuous operation with long-life LED components and redundant power support.
- The video wall shall support native resolution mapping and real-time display of multiple content sources without visual distortion.
- The solution shall support integration of dashboards and application sources for continuous monitoring.
- The bidder shall submit OEM datasheets confirming COB technology along with OEM authorization letter.

## BILL OF QUANTITY

TECHNICAL BOQ		
Sr.No	Equipment Detail	QUANTITY
2.	Video Wall : 30 ft (W) × 8 ft (H).	1

### Warranty:

Comprehensive post-sales support for hardware and software for three (03) years with 24×7 extendable support. Documentary evidence required confirming availability of spare parts in Pakistan with next business day (NBD) delivery in major cities.

### Delivery Timelines:

The delivery timeline for the supply, installation, and commissioning of Video Wall will be 10–12 weeks from the date of issuance of the Purchase Order. However, PRAL reserves the right to extend or revise the delivery timeline as deemed necessary.

TECHNICAL EVALUATION CRITERIA				
Sr #	Descriptions	Total Points	Scoring Points	Remarks
1	<b>Client Portfolio/ Relevant Experience</b>	<b>20</b>		<b>Remarks</b> (Attachment of relevant evidence in each case is mandatory. In case of non-compliance no mark will be awarded)
	Supplied & Installed similar nature of Equipment to more than 10 local/international/multinational clients including public sector or private sector organizations:		<b>20</b>	<b>Documentary proof:</b> (Purchase/Service order/ copies of contract with contact details of clients should be furnished, along with completion certificates *Multiple projects with same client will be counted as one. Note: A Prospective bidder who has submitted completion certificates for
	Supplied & Installed similar nature of Equipment to more than 06 but less than or equal to 10 local/international/multinational clients including public sector or private sector organizations:		<b>15</b>	
	Supplied & Installed similar nature of Equipment to more than 03 but less than or equal to 06		<b>10</b>	

	local/international/multinational clients including public sector or private sector organizations:			the past projects has to submit 25% satisfactory certificates
	Less than 3 projects.		<b>Disqualification</b>	
<b>2</b>	<b>Compliance to the Technical Specifications and scope of work mentioned in the bidding document</b>	<b>40</b>		
	100% Compliance to the Specifications and scope of work / services mentioned in the bidding document.		40	If the quoted product is fully complied with the specifications mentioned in the Scope of Work, full Marks will be given, else zero (0). (Bidder to share the copies of technical literature, Data Sheet & Brochures from the manufacturer, which may be verified on the Internet)
<b>4</b>	<b>Presence of the OEM or OEM's authorized Tier 1 partner in Pakistan for Warranty &amp; technical Support</b>	<b>10</b>		
	Presence of Principal/OEM or OEM's authorized Tier 1 partner in Pakistan for equipment warranty & Support Services		<b>10</b>	A Written confirmation from Principal/OEM on their Letterhead is required confirming their or their authorized tier 1 partner presence in Pakistan for equipment warranty & Support services.
<b>5</b>	<b>Compliance to the delivery timelines for the supply, installation, commissioning of servers</b>	<b>15</b>		
	The Delivery Timelines for the supply, installation, commissioning of servers is 10-12 weeks after issuance of Purchase Order, Bidder to share compliance.		<b>15</b>	A written confirmation on Company's letterhead is required.
	12-14 weeks		<b>10</b>	

	14-16 weeks		5	
	above 16 weeks		Disqualification	
<b>6</b>	<b>Financial Turnover</b>	<b>15</b>		
	Annual turnover /revenue of the company is greater than or equal to 400 million (PKRs)		15	Documentary proof required (tax returns or financial audited report from registered firm/company for the year 2023-2024 or latest)
	Annual turnover /revenue of the company is less than 400 million (PKRs) but greater than or equal to 300 million (PKRs)		10	
	Annual turnover /revenue of the company is less than 300 million (PKRs) but greater than or equal to 200 million (PKRs)		5	
<b>Total Technical Evaluation Score</b>		<b>100</b>		

**Note: Technical Evaluation Passing Criteria**

- Minimum Threshold for technical qualification is 70%

**Weightage:**

Technical Evaluation: 70%

Financial Evaluation: 30%

## **LOT VI**

The vendor shall provide a complete end to end VDI solution with dual screen support for all users, supporting mixed workloads including monitoring, development, integration, and operations. The solution shall be appropriately sized for concurrent heavy and light users to ensure optimal performance. All required hardware, software, licenses, configurations, and components for go live shall be included. The vendor shall deliver a fully functional, scalable, and high availability VDI environment as a turnkey solution.

### **VDI SOLUTION TECHNICAL SPECIFICATIONS**

- The solution shall provide a Virtual Desktop Infrastructure (VDI) platform to deliver centralized virtual desktops for CCU operators, administrators, and monitoring users.
- The VDI solution shall support dual-monitor (dual-screen) configurations per operator session, enabling simultaneous access to multiple applications, dashboards, and monitoring interfaces without performance impact.
- The VDI solution shall be deployed on server-based compute infrastructure with internal SSD/NVMe storage. No external enterprise SAN/NAS storage is required under the standard scope; however, in case such storage is deemed mandatory based on performance or capacity requirements identified during the site survey, it shall be provided and managed by the client separately.
- The solution shall support high availability (HA) architecture with automatic failover of virtual machines in case of host failure.
- The VDI platform shall support role-based access control (RBAC) to ensure secure separation of user roles and operational privileges.
- The solution shall support access from thin clients, zero clients, and standard endpoints with secure authentication mechanisms.
- The VDI infrastructure shall support centralized image management, enabling creation, update, and deployment of standard desktop images across all users.
- The solution shall support GPU acceleration (if required by workload) for graphical dashboards and visualization applications.
- A mandatory site survey shall be conducted by the bidder to assess user load, application requirements, and infrastructure readiness prior to final sizing.
- Based on the site survey, the bidder shall be responsible for providing the final sizing of compute, memory, and storage resources required for stable VDI performance.
- The VDI solution shall support secure remote access (VPN/SSL-based or equivalent secure gateway) for authorized users, if required.
- The system shall support session persistence and non-persistence desktop models based on operational requirements.
- The solution shall include centralized monitoring, logging, and performance analytics for all virtual desktop sessions.
- Network switches will be provided by the client as baseline infrastructure, subject to validation during site survey. In case of insufficiency, the bidder shall propose additional network components required for performance assurance.

- The bidder shall be fully responsible for end-to-end VDI performance, user experience, and system stability over the final approved architecture.
- The VDI solution shall include three (03) years comprehensive support for hardware, software, and licenses with 24x7 assistance and option for extension.

## BILL OF QUANTITY

TECHNICAL BOQ		
Sr.No	Equipment Detail	QUANTITY
1.	VDI Solution along with all allied accessories	1

### Warranty:

Comprehensive post-sales support for hardware and software for three (03) years with 24x7 extendable support. Documentary evidence required confirming availability of spare parts in Pakistan with next business day (NBD) delivery in major cities.

### Delivery Timelines:

The delivery timeline for the supply, installation, and commissioning of VDI solution will be 10–12 weeks from the date of issuance of the Purchase Order. However, PRAL reserves the right to extend or revise the delivery timeline as deemed necessary.

TECHNICAL EVALUATION CRITERIA				
Sr #	Descriptions	Total Points	Scoring Points	Remarks
1	<b>Client Portfolio/ Relevant Experience</b>	<b>20</b>		<b>Remarks</b> (Attachment of relevant evidence in each case is mandatory. In case of non-compliance no mark will be awarded)
	Supplied & Installed similar nature of Equipment to more than 10 local/international/multinational clients including public sector or private sector organizations:		<b>20</b>	<b>Documentary proof:</b> (Purchase/Service order/ copies of contract with contact details of clients should be furnished, along with completion certificates
	Supplied & Installed similar nature of Equipment to more than 06 but less than or equal to 10		<b>15</b>	

	local/international/multinational clients including public sector or private sector organizations:			*Multiple projects with same client will be counted as one. Note: A Prospective bidder who has submitted completion certificates for the past projects has to submit 25% satisfactory certificates
	Supplied & Installed similar nature of Equipment to more than 03 but less than or equal to 06 local/international/multinational clients including public sector or private sector organizations:		10	
	Less than 3 projects.		Disqualification	
2	<b>Compliance to the Technical Specifications and scope of work mentioned in the bidding document</b>	40		
	100% Compliance to the Specifications and scope of work / services mentioned in the bidding document.		40	If the quoted product is fully complied with the specifications mentioned in the Scope of Work, full Marks will be given, else zero (0). (Bidder to share the copies of technical literature, Data Sheet & Brochures from the manufacturer, which may be verified on the Internet)
4	<b>Presence of the OEM or OEM's authorized Tier 1 partner in Pakistan for Warranty &amp; technical Support</b>	10		
	Presence of Principal/OEM or OEM's authorized Tier 1 partner in Pakistan for equipment warranty & Support Services		10	A Written confirmation from Principal/OEM on their Letterhead is required confirming their or their authorized tier 1 partner presence in Pakistan for equipment warranty & Support services.
5	<b>Compliance to the delivery timelines for the supply, installation, commissioning of servers</b>	15		

	The Delivery Timelines for the supply, installation, commissioning of servers is 10-12 weeks after issuance of Purchase Order, Bidder to share compliance.		<b>15</b>	A written confirmation on Company's letterhead is required.
	12-14 weeks		<b>10</b>	
	14-16 weeks		<b>5</b>	
	above 16 weeks		<b>Disqualification</b>	
<b>6</b>	<b>Financial Turnover</b>	<b>15</b>		
	Annual turnover /revenue of the company is greater than or equal to 400 million (PKRs)		15	Documentary proof required (tax returns or financial audited report from registered firm/company for the year 2023-2024 or latest)
	Annual turnover /revenue of the company is less than 400 million (PKRs) but greater than or equal to 300 million (PKRs)		10	
	Annual turnover /revenue of the company is less than 300 million (PKRs) but greater than or equal to 200 million (PKRs)		<b>5</b>	
<b>Total Technical Evaluation Score</b>		<b>100</b>		

**Note: Technical Evaluation Passing Criteria**

- Minimum Threshold for technical qualification is 70%

**Weightage:**

Technical Evaluation: 70%

Financial Evaluation: 30%

## LOT VII

### Veeam Licenses

Veeam Backup & Replication Enterprise Plus (or equivalent) with Universal License (VUL) for 12 virtual machines covering Primary and Disaster Recovery environments,

#### **Requirements:**

- The bidder shall provide 12 additional Veeam Backup & Replication licenses compatible with the existing deployed environment.
- Proposed licenses shall be genuine, new, and sourced through authorized OEM channels.
- Licenses shall support the currently deployed Veeam Backup & Replication platform and existing infrastructure.
- Solution shall support VMware vSphere 7.x and 8.x and 9.x environments.
- License shall support integration with the existing Veeam Backup & Replication deployment without requiring replacement or reconfiguration of the existing setup.
- The bidder shall ensure compatibility with the existing backup repositories, replication jobs, backup policies, and management console.
- All licenses shall include OEM-backed subscription/support coverage for the required contract period.
- OEM authorization letter must be provided with the bid submission.
- The bidder shall provide installation/configuration assistance and post-deployment support

#### **BILL OF QUANTITY**

TECHNICAL BOQ		
Sr.No	Equipment Detail	QUANTITY
1.	Veeam Backup & Replication Enterprise Plus	12 VUL's

#### **Warranty:**

Comprehensive post-sales support for hardware and software for three (03) years with 24x7 extendable support.

#### **Delivery Timelines:**

The delivery timeline for the supply, installation, and commissioning of veeam backup solution will be 10–12 weeks from the date of issuance of the Purchase Order. However, PRAL reserves the right to extend or revise the delivery timeline as deemed necessary.

**TECHNICAL EVALUATION CRITERIA**

<b>Sr #</b>	<b>Descriptions</b>	<b>Total Points</b>	<b>Scoring Points</b>	<b>Remarks</b> (Attachment of relevant evidence in each case is mandatory. In case of non-compliance no mark will be awarded)
<b>1</b>	<b>Client Portfolio/ Relevant Experience</b>	<b>20</b>		
	Supplied & Installed similar nature of Equipment to more than 10 local/international/multinational clients including public sector or private sector organizations:		<b>20</b>	<b>Documentary proof:</b> (Purchase/Service order/ copies of contract with contact details of clients should be furnished, along with completion certificates *Multiple projects with same client will be counted as one.
	Supplied & Installed similar nature of Equipment to more than 06 but less than or equal to 10 local/international/multinational clients including public sector or private sector organizations:		<b>15</b>	
	Supplied & Installed similar nature of Equipment to more than 03 but less than or equal to 06 local/international/multinational clients including public sector or private sector organizations:		<b>05</b>	
<b>2</b>	<b>Compliance to the Technical Specifications and scope of work mentioned in the bidding document</b>	<b>50</b>		
	100% Compliance to the Specifications and scope of work / services mentioned in the bidding document.		50	If the quoted product is fully complied with the specifications mentioned in the Scope of Work, full Marks will be given, else zero (0). (Bidder to share the copies of technical literature, Data Sheet & Brochures from the manufacturer, which may be verified on the Internet)
<b>3</b>	<b>Parts availability Warranty &amp; technical Support</b>	<b>10</b>		

	Local parts availability, Equipment warranty & Support Services		10	A Written confirmation from Principal/OEM on their Letterhead is required confirming their or their authorized tier 1 partner presence in Pakistan for equipment warranty & Support services.
4	<b>Compliance to the delivery timelines for the supply, installation, commissioning of servers</b>	05		
	The Delivery Timelines for the supply, installation, commissioning of servers is 10-12 weeks after issuance of Purchase Order, Bidder to share compliance.		05	A written confirmation on Company's letterhead is required.
5	<b>Financial Turnover</b>	15		
	Annual turnover /revenue of the company is greater than or equal to 300 million (PKRs)		15	Documentary proof required (tax returns or financial audited report from registered firm/company for the year 2023-2024 or latest)
	Annual turnover /revenue of the company is less than 300 million (PKRs) but greater than or equal to 200 million (PKRs)		10	
	Annual turnover /revenue of the company is less than 200 million (PKRs) but greater than or equal to 100 million (PKRs)		5	
<b>Total Technical Evaluation Score</b>		<b>100</b>		

**Note: Technical Evaluation Passing Criteria**

- Minimum Threshold for technical qualification is 70%

**Weightage:**

Technical Evaluation: 70%

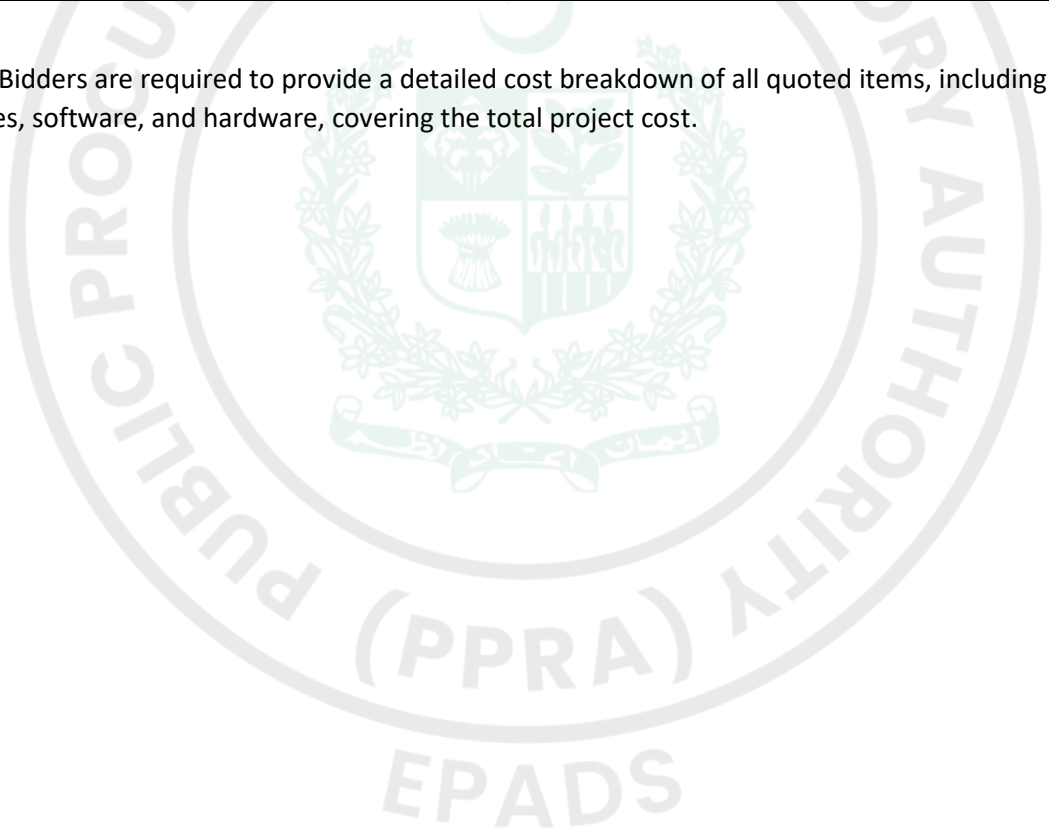
Financial Evaluation: 30%

**Lot-1**

**Financial Proposal Format**

<b><u>SR #</u></b>	<b><u>Description</u></b>	<b><u>Unit</u></b>	<b><u>Quantity</u></b>	<b><u>Unit Price in PKR (without applicable GST/PST)</u></b>	<b><u>GST/PST amount applicable per unit in PKR</u></b>	<b><u>Unit Price in PKR (inclusive of all applicable taxes)</u></b>	<b><u>Total Cost in PKR (inclusive of all applicable taxes)</u></b>
<b><u>01</u></b>	Total Project Cost						
	<b><u>Total Cost (inclusive of all applicable taxes)</u></b>						
	<b><u>Total Amount in Words</u></b>						

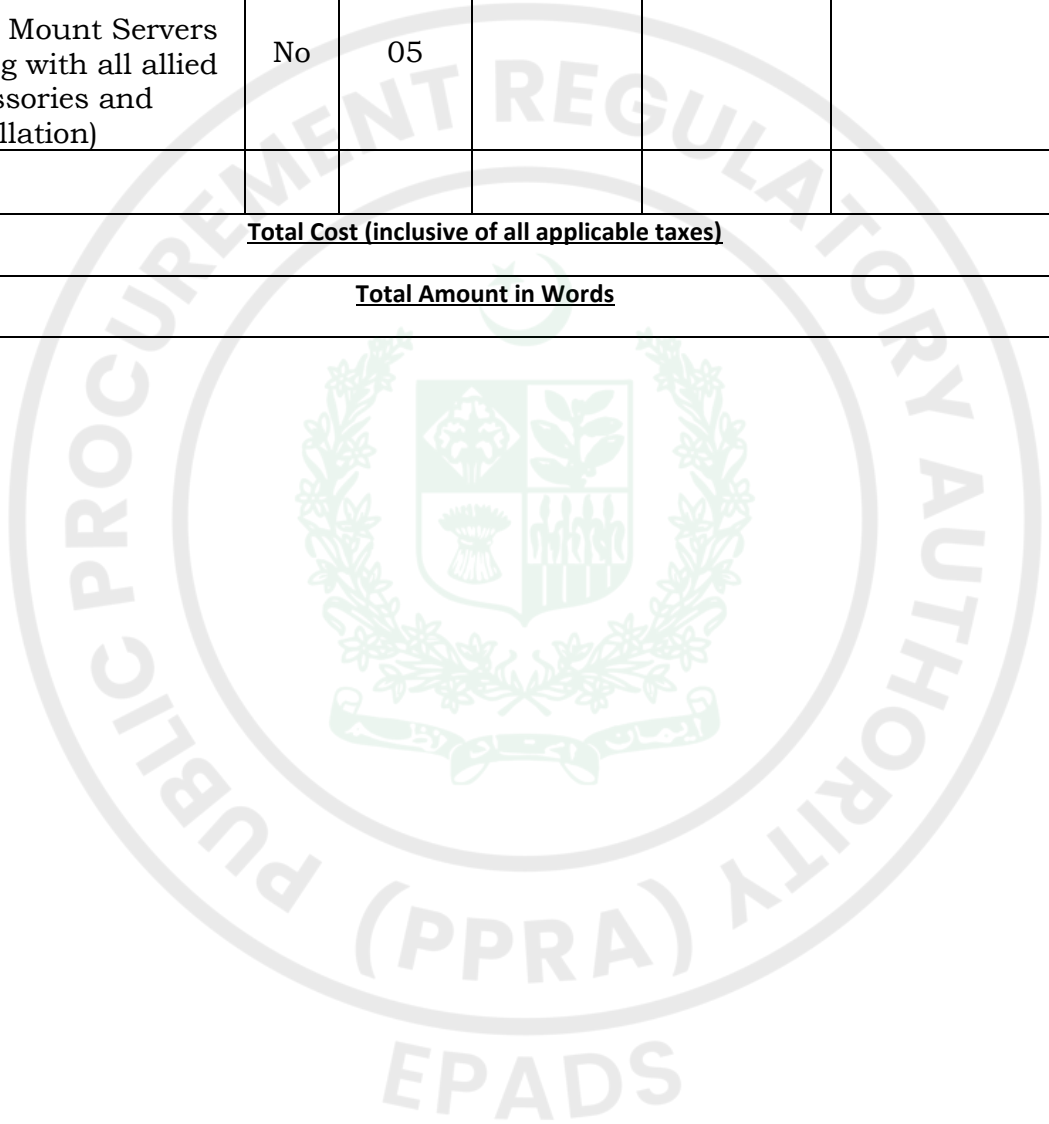
**Note:** Bidders are required to provide a detailed cost breakdown of all quoted items, including services, software, and hardware, covering the total project cost.



**Lot-2**

**Financial Proposal Format**

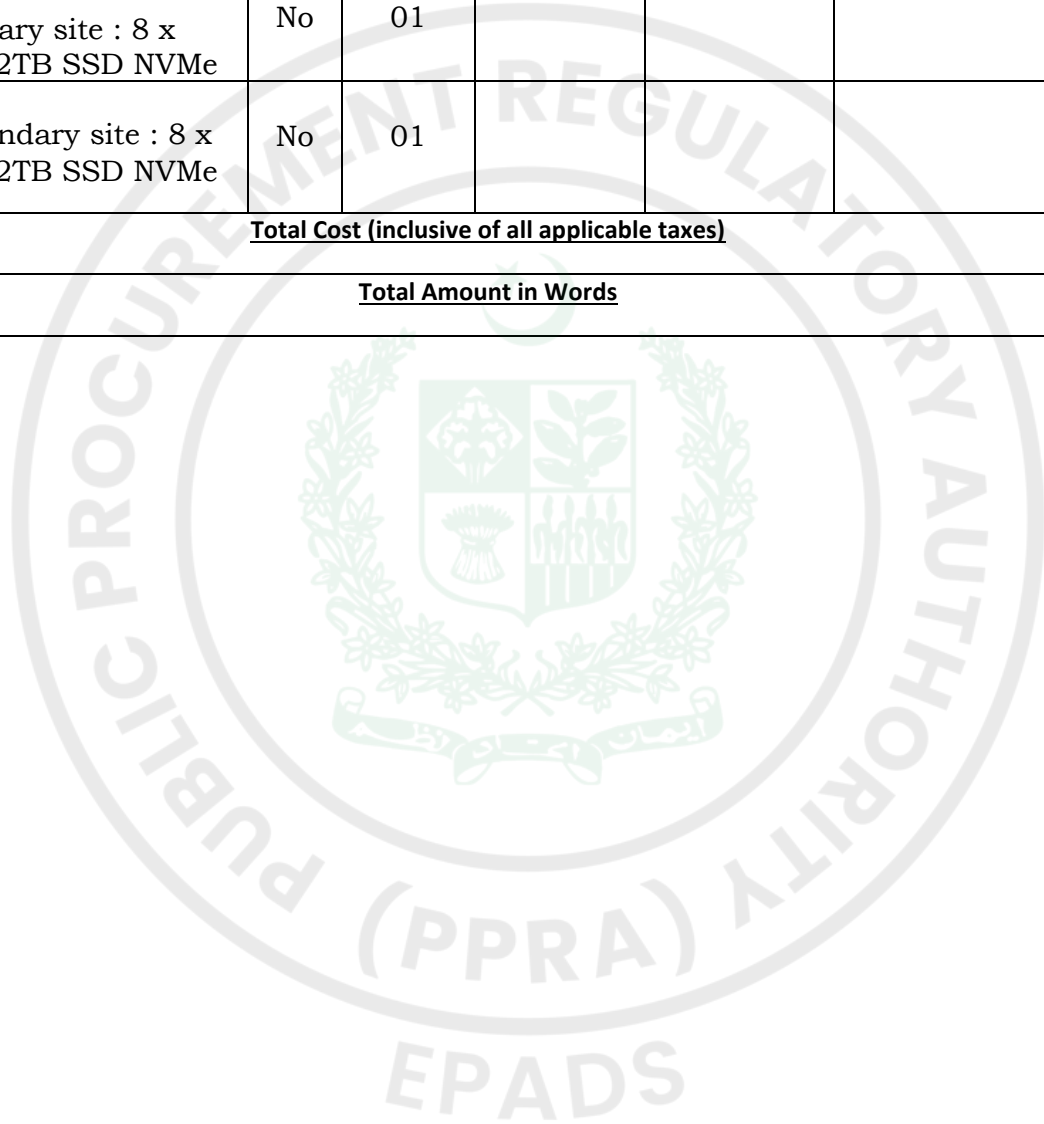
<b>SR #</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Price in PKR (without applicable GST/PST)</b>	<b>GST/PST amount applicable per unit in PKR</b>	<b>Unit Price in PKR (inclusive of all applicable taxes)</b>	<b>Total Cost in PKR (inclusive of all applicable taxes)</b>
1.	Rack Mount Servers (Along with all allied accessories and installation)	No	05				
	<b>Total Cost (inclusive of all applicable taxes)</b>						
	<b>Total Amount in Words</b>						



**Lot-3 Option 1**

**Financial Proposal Format**

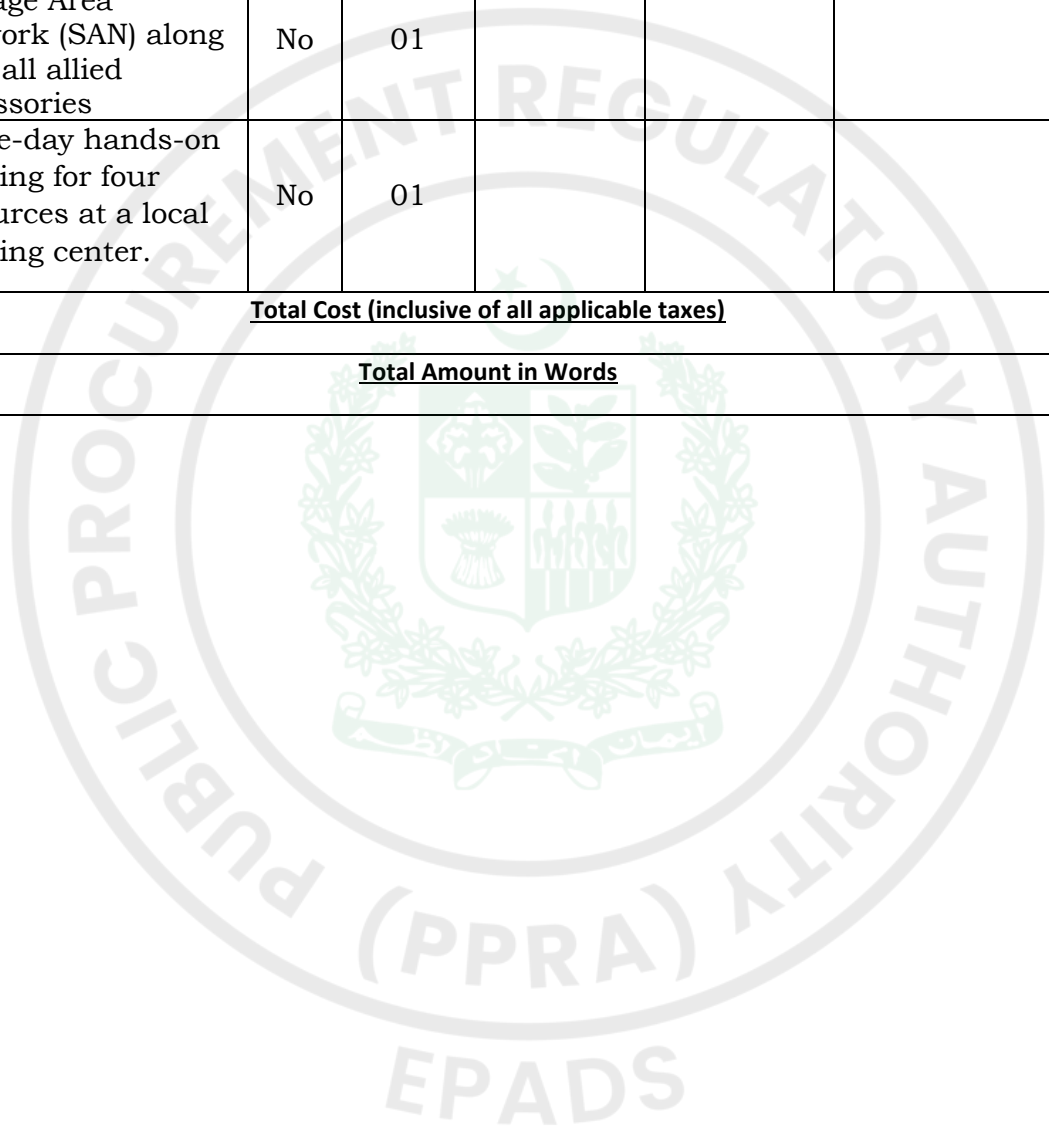
<b>SR #</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Price in PKR (without applicable GST/PST)</b>	<b>GST/PST amount applicable per unit in PKR</b>	<b>Unit Price in PKR (inclusive of all applicable taxes)</b>	<b>Total Cost in PKR (inclusive of all applicable taxes)</b>
1.	Primary site : 8 x 30.72TB SSD NVMe	No	01				
2	Secondary site : 8 x 30.72TB SSD NVMe	No	01				
<b>Total Cost (inclusive of all applicable taxes)</b>							
<b>Total Amount in Words</b>							



**Lot-3 Option 2**

**Financial Proposal Format**

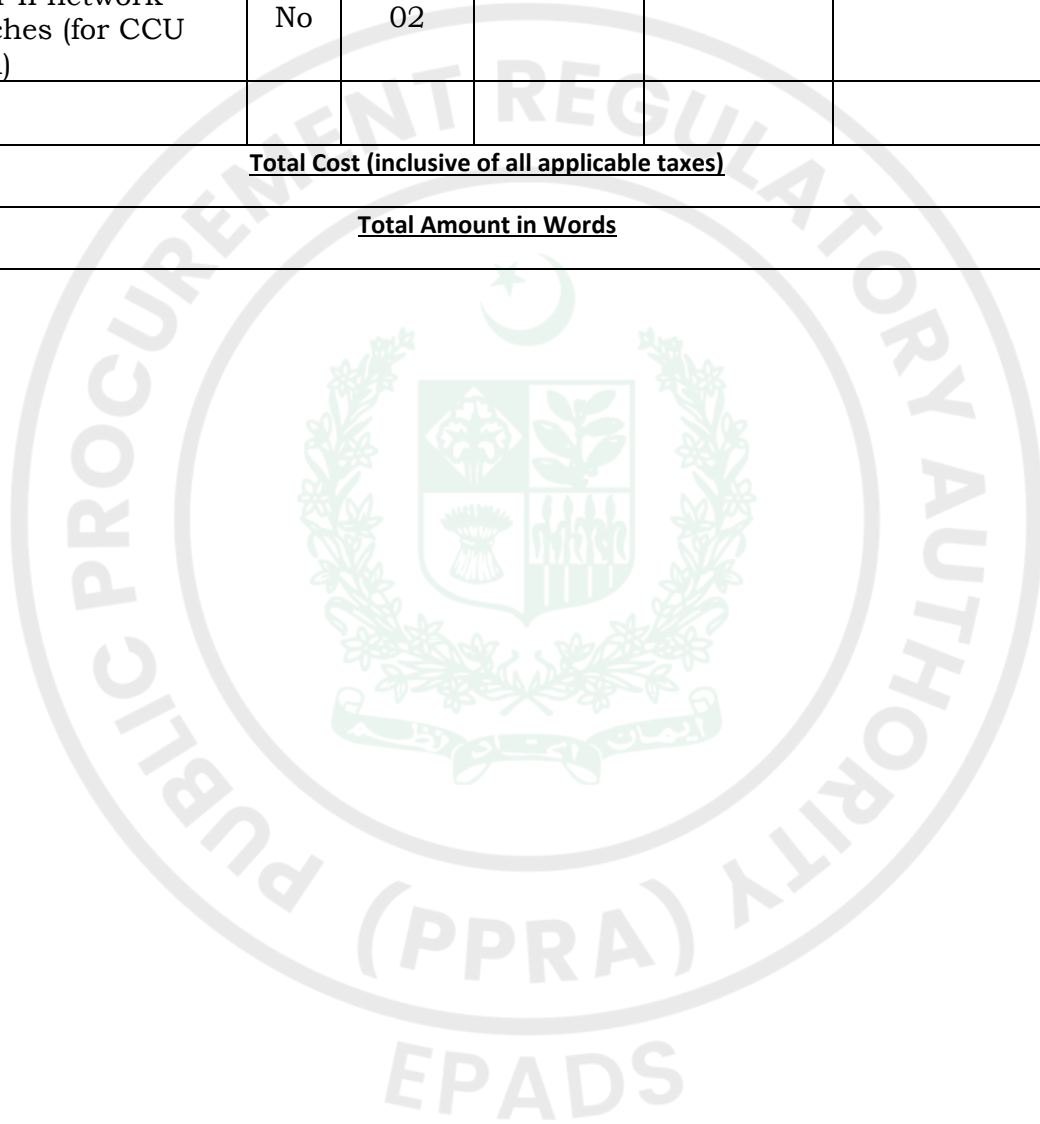
<b>SR #</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Price in PKR (without applicable GST/PST)</b>	<b>GST/PST amount applicable per unit in PKR</b>	<b>Unit Price in PKR (inclusive of all applicable taxes)</b>	<b>Total Cost in PKR (inclusive of all applicable taxes)</b>
1.	Storage Area Network (SAN) along with all allied accessories	No	01				
2	Three-day hands-on training for four resources at a local training center.	No	01				
	<b>Total Cost (inclusive of all applicable taxes)</b>						
	<b>Total Amount in Words</b>						



**Lot-4**

**Financial Proposal Format**

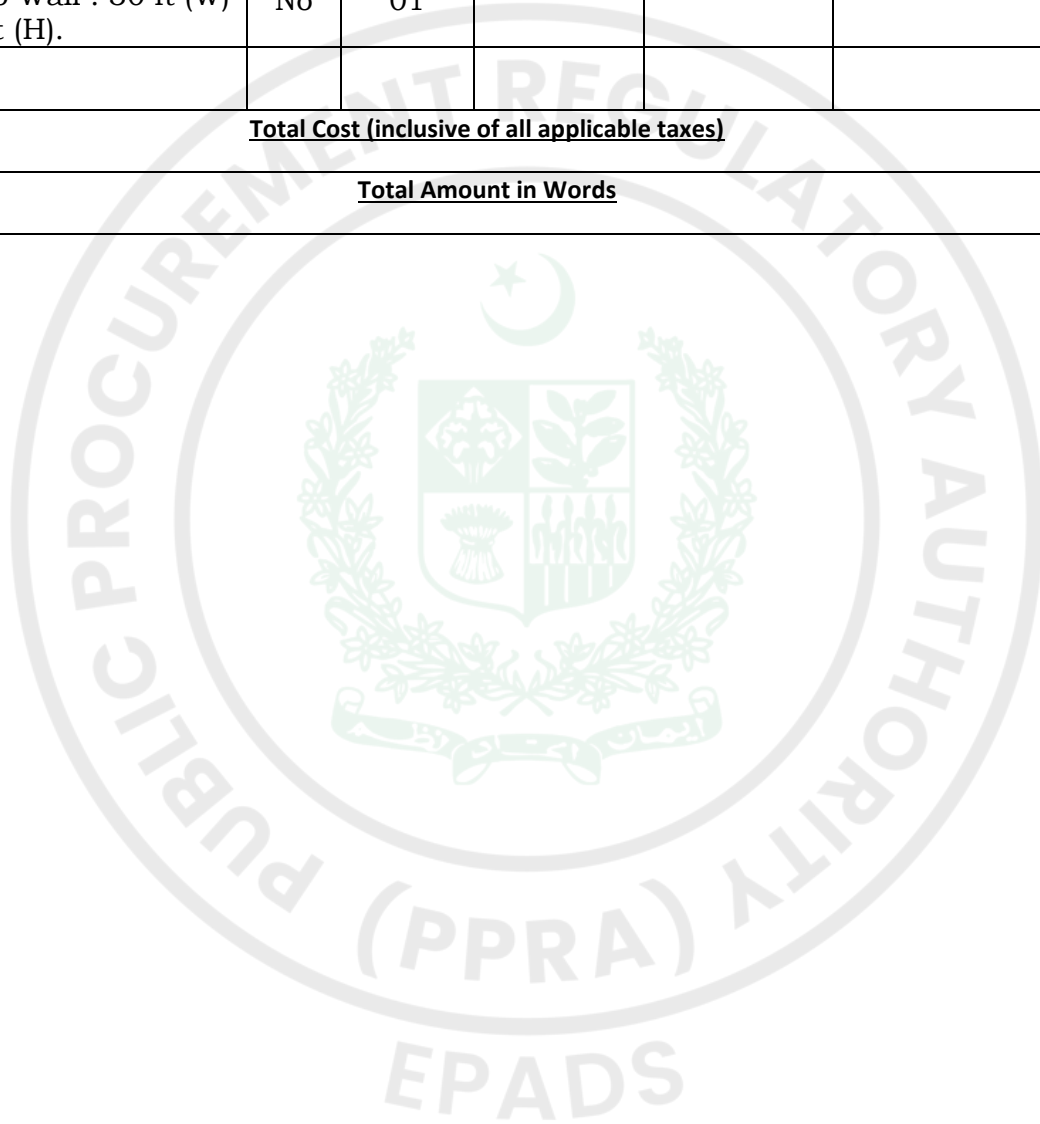
<b>SR #</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Price in PKR (without applicable GST/PST)</b>	<b>GST/PST amount applicable per unit in PKR</b>	<b>Unit Price in PKR (inclusive of all applicable taxes)</b>	<b>Total Cost in PKR (inclusive of all applicable taxes)</b>
1.	Layer II network switches (for CCU room)	No	02				
	<b>Total Cost (inclusive of all applicable taxes)</b>						
	<b>Total Amount in Words</b>						



**Lot-5 Option 1**

**Financial Proposal Format**

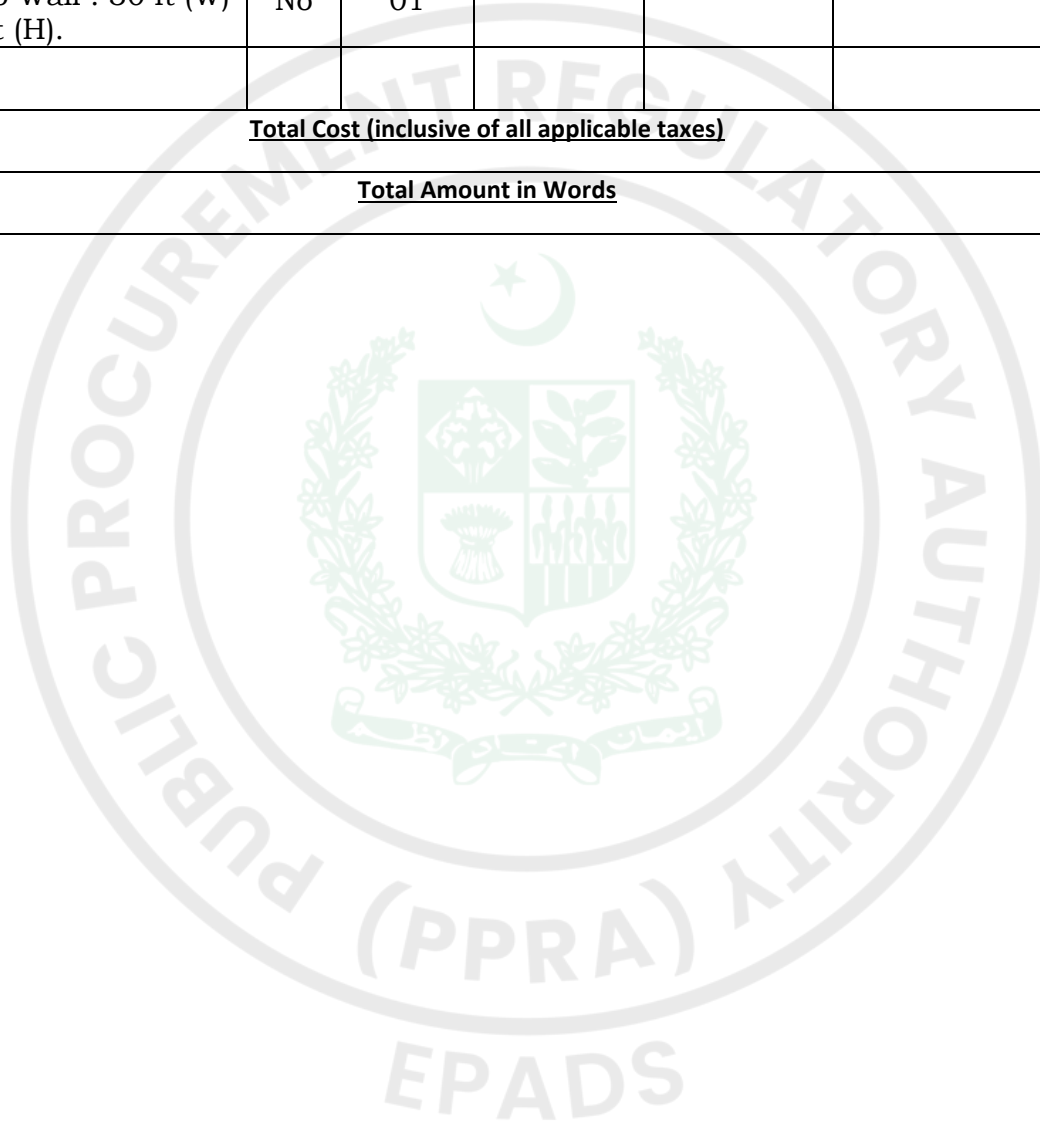
<b><u>SR #</u></b>	<b><u>Description</u></b>	<b><u>Unit</u></b>	<b><u>Quantity</u></b>	<b><u>Unit Price in PKR (without applicable GST/PST)</u></b>	<b><u>GST/PST amount applicable per unit in PKR</u></b>	<b><u>Unit Price in PKR (inclusive of all applicable taxes)</u></b>	<b><u>Total Cost in PKR (inclusive of all applicable taxes)</u></b>
1.	Video Wall : 30 ft (W) × 8 ft (H).	No	01				
	<b><u>Total Cost (inclusive of all applicable taxes)</u></b>						
	<b><u>Total Amount in Words</u></b>						



**Lot-5 Option 2**

**Financial Proposal Format**

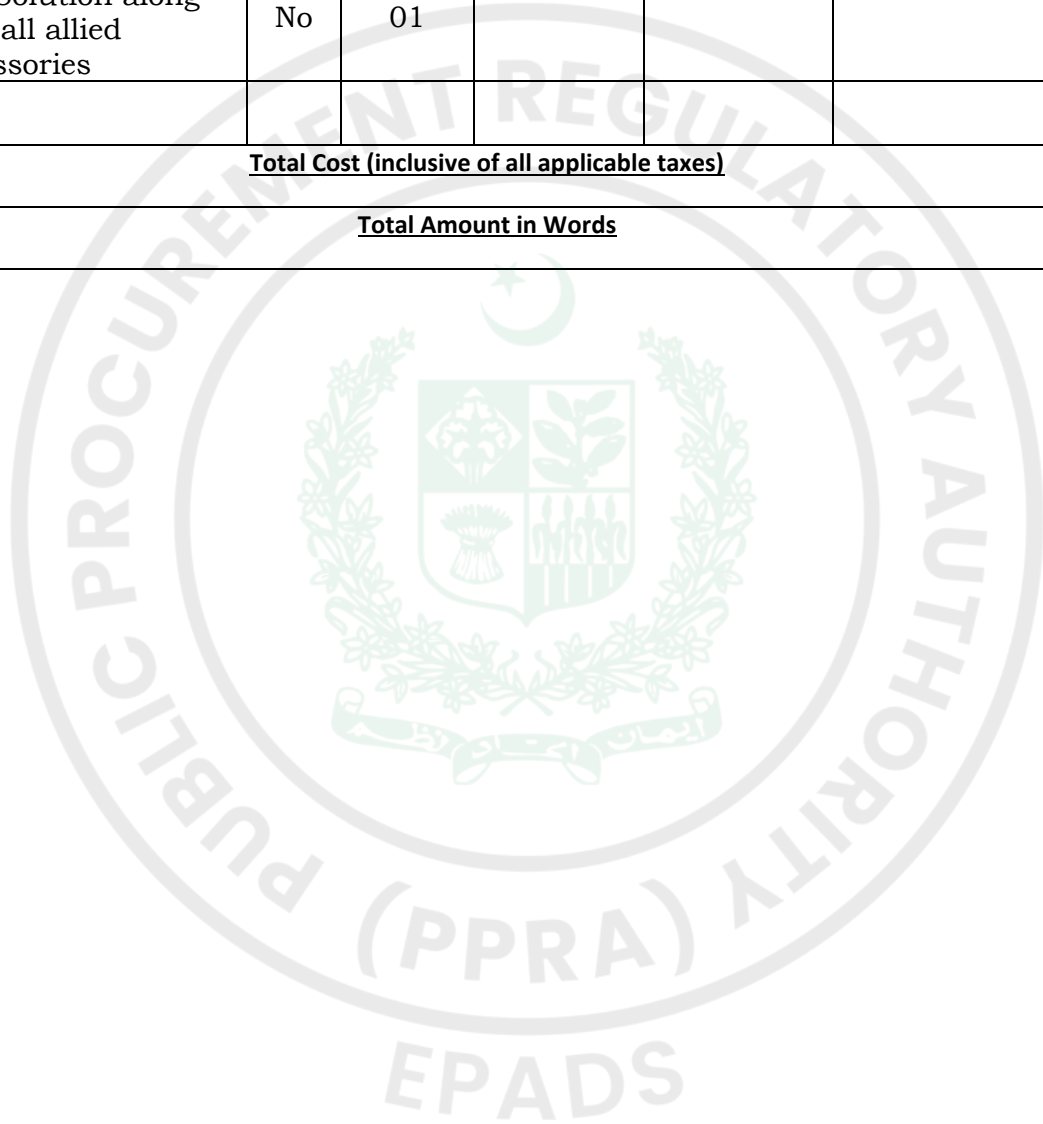
<b>SR #</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Price in PKR (without applicable GST/PST)</b>	<b>GST/PST amount applicable per unit in PKR</b>	<b>Unit Price in PKR (inclusive of all applicable taxes)</b>	<b>Total Cost in PKR (inclusive of all applicable taxes)</b>
1.	Video Wall : 30 ft (W) × 8 ft (H).	No	01				
	<b>Total Cost (inclusive of all applicable taxes)</b>						
	<b>Total Amount in Words</b>						



**Lot-6**

**Financial Proposal Format**

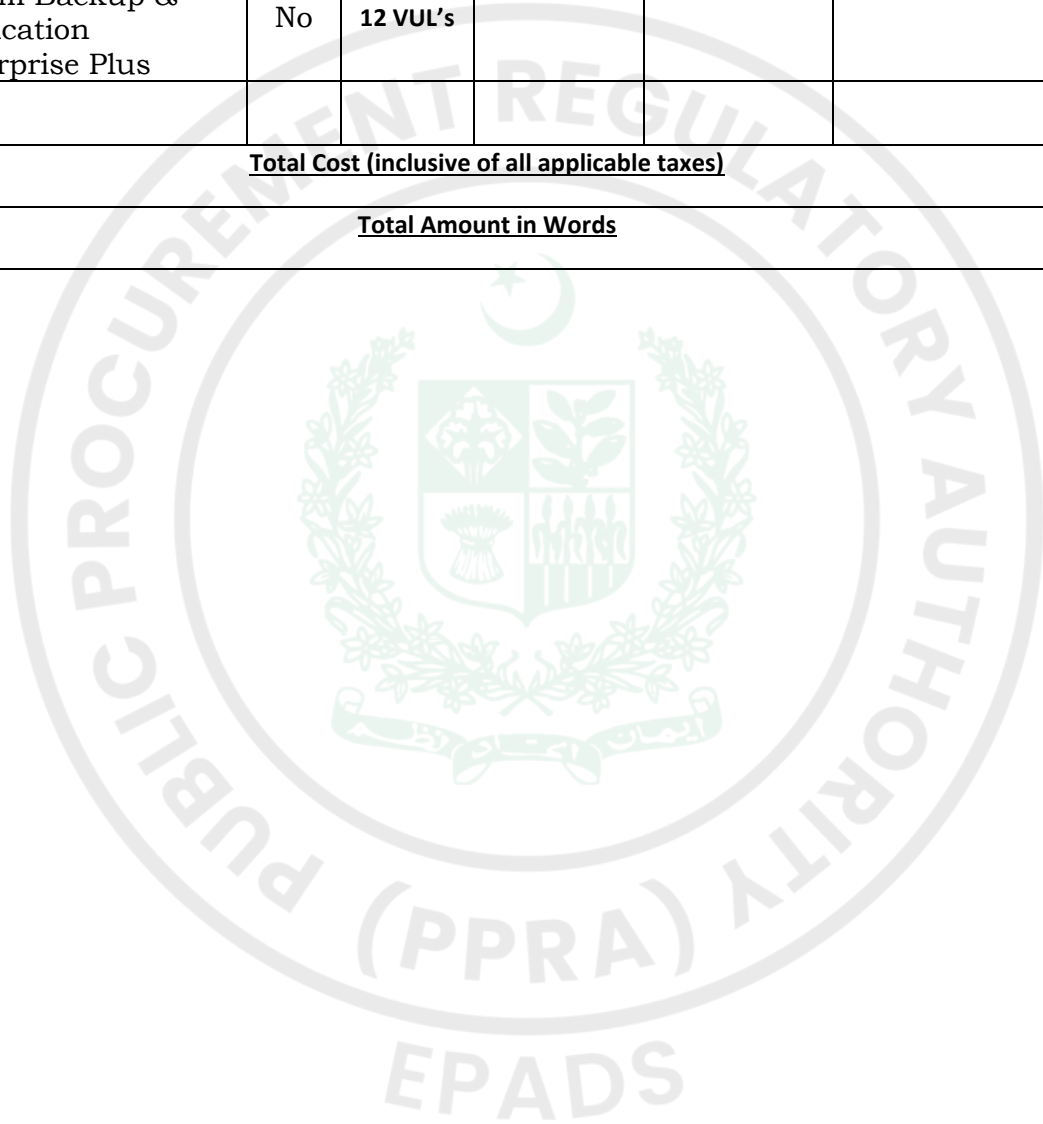
<b>SR #</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Price in PKR (without applicable GST/PST)</b>	<b>GST/PST amount applicable per unit in PKR</b>	<b>Unit Price in PKR (inclusive of all applicable taxes)</b>	<b>Total Cost in PKR (inclusive of all applicable taxes)</b>
1.	VDI Solution along with all allied accessories	No	01				
	<b>Total Cost (inclusive of all applicable taxes)</b>						
	<b>Total Amount in Words</b>						



**Lot-7**

**Financial Proposal Format**

<b>SR #</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Price in PKR (without applicable GST/PST)</b>	<b>GST/PST amount applicable per unit in PKR</b>	<b>Unit Price in PKR (inclusive of all applicable taxes)</b>	<b>Total Cost in PKR (inclusive of all applicable taxes)</b>
1.	Veeam Backup & Replication Enterprise Plus	No	12 VUL's				
	<b>Total Cost (inclusive of all applicable taxes)</b>						
	<b>Total Amount in Words</b>						



### Performance Evaluation Certificate

This is to certify that M/s \_\_\_\_\_ has executed the project “ \_\_\_\_\_ ” for \_\_\_\_\_.

The performance of the firm has been evaluated and found to be satisfactory. The project was completed within the stipulated time frame and in accordance with the agreed specifications and contractual obligations.

No significant deviations, deficiencies, or performance issues were observed during the execution of the project.

Authorized Signatory

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Organization: \_\_\_\_\_

Date: \_\_\_\_\_

**Note:** This certificate must be issued on the **official letterhead**, duly **signed and stamped** by the authorized representative of the relevant organization.



(Beneficial Owners Information)

Declaration of Ultimate Beneficial Owners Information for Public Procurement Contracts.

1. Name
2. Father's Name/Spouse's Name
3. CNIC/NICOP/Passport No.
4. Nationality
5. Residential address
6. Email address
7. Date on which shareholding, control or interest acquired in the business.
8. In case of indirect shareholding, control or interest being exercised through intermediary companies, entries or other legal persons or legal arrangements in the chain of ownership or control, following additional particulars to be provided:

1	2	3	4	5	6	7	8	9	10
Name	Legal form (company/Limited Liability Partnership/Association of Persons/Single Member Company/partnership Firm/Trust/Any other individual body corporate (to be specified))	Date of incorporation/registration	Name of registering authority	Business Address	Country	Email address	Percentage of shareholding, control or interest of BO in the legal person or legal arrangement	Percentage of shareholding control or interest of legal person or legal arrangement in the Company	Identify of natural person who ultimately owns or controls the legal person or arrangement

9. Information about the Board of Directors (details shall be provided regarding number of shares in the capital of the company as set opposite respective names).

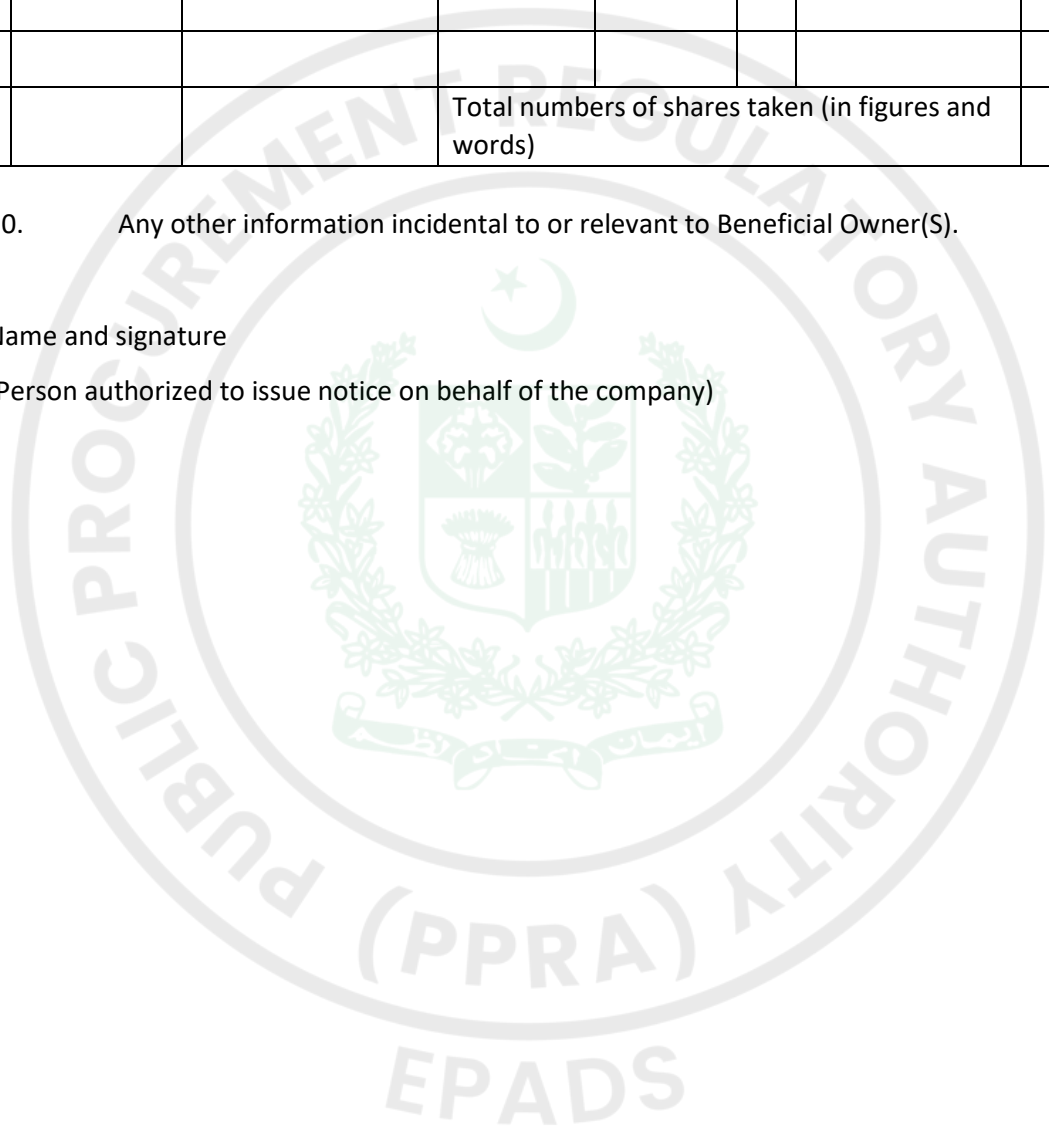
1	2	3	4	5	6	7	8

Name and surname (in Block Letters)	CNIC No. (in case of foreigner, Passport No.)	Father's/Husband's Name in full	Current Nationality	Any other Nationality (ies)	Occupation	Residential address in full or the registered/principal office address for a subscriber other than natural person	Number of shares taken by cash subscriber (in figures and words)
			Total numbers of shares taken (in figures and words)				

10. Any other information incidental to or relevant to Beneficial Owner(S).

Name and signature

(Person authorized to issue notice on behalf of the company)



## Past Experience / Contracts

Contracts over *[insert amount]* during the last three years:

Procuring Agency	Value	Year	Goods/Services Supplied	Country of Destination



## Current Contract Commitments / Contracts in Progress Form

<b>1. Name of Contract(s)</b>
<b>2. Procuring Agency Contact Information [insert address, telephone, fax, e-mail address]</b>
<b>3. Value of outstanding contracts [current PKR equivalent]</b>
<b>4. Estimated Delivery Date</b>
<b>5. Average monthly invoices over the last six months (PKR/mon.)</b>

## Financial Situation and Performance

*[The following table shall be filled in for the Applicant and for each member of a Joint Venture]*

Applicant's Name: *[insert full name]*

Date: *[insert day, month, year]*

Joint Venture Member Name: *[insert full name]*

IFP No. and title: *[insert IFP number and title]*

Page *[insert page number]* of *[insert total number]* pages

### 1. Financial data

Type of Financial information in (currency)	Historic information for previous <i>[insert number]</i> years, <i>[insert in words]</i> (amount in currency, currency, exchange rate*, PKR equivalent)				
	Year 1	Year 2	Year 3		
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Total Equity/Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Working Capital (WC)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

\* Refer ITA 14 for the exchange rate

### 3. Financial documents

The Applicant and in case of JV, members of JV shall provide copies of financial statements for *[number]* years pursuant Section III, Qualifications Criteria and Requirements. The financial statements shall:

- (a) reflect the financial situation of the Applicant or in case of JV member, and not an affiliated entity (such as parent company or group member).
  - (b) be independently audited or certified in accordance with local legislation.
  - (c) be complete, including all notes to the financial statements.
  - (d) correspond to accounting periods already completed and audited.
- Attached are copies of financial statements<sup>1</sup> for the *[number]* years required above; and complying with the requirements.

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<sup>1</sup> If the most recent set of financial statements is for a period earlier than 12 months from the date of Application, the reason for this should be justified.

## Average Annual Turnover (Annual Sales Value)

*[The following table shall be filled in for the Applicant and for each member of a Joint Venture]*

Applicant's Name: *[insert full name]*

Date: *[insert day, month, year]*

Joint Venture Member Name: *[insert full name]*

IFP No. and title: *[insert IFP number and title]*

Page *[insert page number]* of *[insert total number]* pages

<b>Annual Turnover Data</b>			
<b>Year</b>	<b>Amount Currency</b>	<b>Exchange rate* (If applicable)</b>	<b>PKR equivalent</b>
<i>[indicate calendar year]</i>	<i>[insert amount and indicate currency]</i>		
		Average Annual Turnover **	

\* Refer ITA for date and source of exchange rate.

\*\* Total PKR equivalent for all years divided by the total number of years. See Section III, Qualification Criteria and Requirements, ITA.